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ORIGINAL ARTICLES.

CONSERVATISM IN OVARIOTOMY.

BY HOWARD A. KELLY, M.D.

PROFESSOR OF GYNECOLOGY IN THE JOHNS HOPKINS UNIVERSITY. BALTIMORE, MD.

I have recently received two vigorous letters, which I enclose, from friends who are doctors, upon the ethical status of the operation for the removal of the ovaries. These letters have brought vividly to mind a note which I published in the *American Journal of Obstetrics*, for February 1893, entitled "The Ethical Side of the Operation of Oöphorectomy;" I have gone over the ground once more from the standpoint of almost three years' growth in gynecology, to see what positive advances have been made in answer to this burning question. Both of the letters are from highly valued friends, for whose opinions I have a profound respect, and in whose judgment I place full confidence; I feel under obligation to reply to them in such a way as shall effectually promote the end in view. One of the letters, the second one, is from a distinguished physician, the leading practitioner in one of our large cities, and a man of national reputation. I publish both just as I have received them, believing them to be more valuable in this form, than if I had asked the writers to make alterations in accordance with any minor criticisms I might have to offer.

Conservatism, the appeal of my correspondents to conscientious gynecologists, is undoubtedly the progressive spirit in gynecology; exsective and amputative gynecology has gone to its extreme limits, and the more thoughtful surgeons looking at all the questions involved, in their broader aspects, have already sounded the keynote of the new advance. To put the matter clearly before the minds of practitioners in general, I would cite categorically the following conservative procedures, which replace radical measures:

1.—Resection of diseased ovaries and opening and draining tubes, as urged by Dr. Wm. M. Polk, of New York, in the *American Journal of Obstetrics*, July, 1894, Vol. XXX, pp. 1-15, and in the *Transactions of the American Gynecological Society*, 1893, Vol. XVIII, p. 175.

2.—Myomectomy as a substitute for hysteromyomectomy, by Dr. E. C. Dudley, of Chicago, in the *Transactions of the American Gynecological Society*, 1894, Vol. XIX, p. 126.

3.—Opening and draining pelvic abscesses posterior to the uterus. See "Conservative Treatment of Pyosalpinx," by Cornelius Kollock, in *Transactions of the Southern Surgical and Gynecological Association* Vol. VI, p. 43. Also "Conservative Surgical Treatment of Para- and Peri-uterine Septic Disease" by Fernand Henrotin in the *Transactions of the American Gynecological Society*, Vol. XX, p. 223; reviewed editorially in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, June 22, 1895, p. 983.

4.—Vaginal drainage in some cases of extra-uterine pregnancy. See my article in *An American Text-book of Obstetrics*, Philadelphia, 1895.

5.—Excision of both large and small parovarian cysts, without sacrificing ovary and tube, in my own practice not yet reported.

I do not wish to dwell on these operations now, for it is rather my object to try to arouse a more general feeling of interest in the broad moral bearings of the entire question. In doing this, I dare not omit the most fruitful of all causes of the unnecessary mutilation of women, and that is, the large numbers of men all over the country who are entering upon this specialty without any adequate preparation, and are yet anxious at as early a date as possible to "make a record." I have seen repeated examples of this reckless exsective surgery, and it is my privilege every week to save women who have in some instances traveled long distances to get further advice. Only yesterday I saw a hysterical girl about 18 years old, drugged with morphin, and without any pelvic disease whatever, whose physician thought that ovariotomy was clearly indicated. A patient, now under treatment for a mild trigonitis (inflammation of the vesical trigonum), came to me because her previous attendant, after some treatments applied to her ovaries through the vault of the vagina, declared that her ovaries and tubes were diseased and must come out, or he could not cure her. And yet she has not a trace of pelvic disease outside the little trouble in the bladder. And so on, I might add case after case *usque ad infinitum*.

I shall not, in this brief appeal to higher morals, analyze causes minutely, but I can not help adding that apart from the question of integrity involved, these men have never thoroughly learned, at the hands of a skilled clinician, the technique of the bimanual examination; they make their diagnoses symptomatically, and hence the frightful errors. Nor would I lay all the blame on the untrained men; even the best men have erred, but they have had the saving grace to report their errors for the benefit of others. As evidence of this, I pick up with little effort, the following cases of pregnancy occurring in women, the first six of whom had been advised to have their ovaries and tubes removed, but had refused, and twenty-four of whom under the ordinary procedure of the day would inevitably have been made sterile:

Women refusing operation who afterward became pregnant and bore children: Dr. Wm. Goodell, two cases (*Clinical Gynecology*. Keating and Coe. Introduction, p. 10). Dr. Archibald MacLaren, one case. (*Trans. Amer. Gyn. Soc.*, 1893, vol. XVIII, p. 334). Dr. Charlotte B. Brown, one case ("Rest, a Therapeutic Means in Gynecology." Read before the Medical Society of California. April, 1895). Dr. H. A. Kelly, two cases (unreported).

Cases of abdominal operations on ovaries treated

conservatively, followed by pregnancy: Dr. Wm. M. Polk, nine cases (*Amer. Jour. Obst.*, July, 1894, vol. xxx, p. 1). Dr. Robert A. Murray, six cases (See Dr. Polk's paper, just cited). Dr. B. McMonagle, one case (See Dr. Polk's paper). Dr. B. F. Baer, one case (See Dr. Polk's paper). Dr. Frank Talley, one case (*Amer. Gyn. Obst. Jour.*, March, 1895). Dr. H. A. Kelly, three cases (unreported). Dr. Matthaei, six cases, five children (*Zeitschr. f. Geb. u. Gyn.*, vol. 1, part 2).

Dr. Polk had six cases of inflammatory disease in which he conserved the appendages, with the result of nine pregnancies. Dr. McMonagle's case was altogether remarkable and ought to be carefully studied by every gynecologist. In one of my own cases I opened and drained a large right ovarian abscess, and pregnancy occurred within two years. We have here then, as a result of this conservatism, either by the insistence of the patient, or the election of the surgeon, in twenty-nine women thirty-two childbirths. (One of Dr. Polk's patient's, "wearying of maternity," secured a criminal abortion to rid herself of her second conception after the operation.) These facts need no comment, and speak volumes for the recuperative powers of these organs in disease. Another moral consideration of great weight is the necessity in all cases of making the woman clearly understand the effects of the operation on her whole life; undoubtedly many women accept the alternative of an operation in utter ignorance of its full consequences. The especial importance of this question to unmarried women may be seen when we reflect that about 20 per cent. of all women do not marry, and that these are precisely the cases most likely to suffer at the hands of the unskilled surgeon. He is unable to make a clear diagnosis owing to physical obstructions, and so after a time, if the patient continues to suffer pain, he hazards a conjecture that the ovaries are diseased and decides that they must come out.

There is another question raised by these letters which ought to be considered in the interests of pure morals, and that is, the attitude of the physician toward the prevention of the infection of wives by their husbands. I know of no more distressing and pitiful sight than the pure women I often see whose lives have been wrecked by a marital infection. Just what course to pursue in the particular instance, the surgeon must determine for himself; but one conviction ought to rest on every man in the profession, and at all times find unhesitating expression, and that is, that there must not be a double standard of morals. What is wrong for a woman to do is wrong for a man to do. A female prostitute is as good as a male prostitute, and ought to command the same consideration and respect. This is a wise policy which looks to the future of the race, and its quickening influences and sound scientific results will surely be felt by our followers. If men were, as a class, as chaste as women, many of the problems of gynecology would solve themselves.

With this introduction, I will now let my correspondents speak, only adding that I feel in entire sympathy with the spirit of the letters.

LETTER I.

The operation of ovariotomy has two aspects, the ethical and the medical, both of which, I think, are likely to be lost sight of by the ambitious young surgeon who sums up the whole matter so cavalierly, "recovery uneventful." On the ethical side, an uneventful recovery may mean for the woman a life of unhappiness, and it is an open question whether the sum total of uneventful recoveries does not increase immorality among men.

The function of menstruation is a natural process most intimately associated with the highest and holiest feelings of womanhood. Most women rejoice in potential motherhood, and, when the time comes, gladly take their lives in their hands to accomplish it. I have personally known no exceptions to this rule, except those unfortunate women who were married to sensual and brutal husbands. A sensible woman wants to be well, to keep all the organs of her body in good condition, so as to perform all the duties of life. One of the most important of these, and precisely the one that comes nearest her heart, is the bearing and rearing of children. Now, the operation of ovariotomy places the marriage relation distinctly on a lower plane, and I am surprised to have seen this view expressed but once, even by the conservative surgeons. The grossness of the physical union in marriage is redeemed by its moral significance, the desire for children. This desire is stronger in women than in men, so strong that when I consider all the suffering of women in all the ages of the world for it, I am appalled. Think for one moment what women have endured, from the brutality of men, from the ignorance and blunders of medical science, from a pitiless and degrading theology that denominates the pangs of maternity, "the curse of Eve." Men want children, too, but they do not care so much about them as women do, they do not make sacrifices for them half so willingly.

The existence of prostitution shows the difference between men and women as to the sexual instinct when the hope of children does not enter into it. Women prostitutes are almost wholly from the working-classes; they are often ignorant country girls who have first been betrayed, and who are then forced to live in shame, because the hard economic conditions of life for women prevent them from gaining an honest livelihood. An English barrister working among the poor of London estimated last winter that 20,000 prostitutes in London world gladly give up the calling, if they could find reputaole employment. And a late utterance from one of the physicians on Blackwell's Island, New York, is, that the most practical means of meeting the social evil is to open up avenues of employment for women. Men prostitutes, on the other hand, are from every class, and pay; they do not debase themselves for the means to live. It is unhappily too true that a great many men have no notion of endearment or of shame in the sexual life, and this difference between men and women bears upon the operation of ovariotomy in two ways. In the first place, it is morally indefensible to mutilate the wife for the sins committed by the husband before marriage. It adds frightfully to the physical disabilities of women, and it is a positive encouragement of vice. Every physician knows how many pure women fall victims to their husbands in this way, and it is the duty of every reputable physician to the community he lives in to discourage ovariotomy, except for most urgent reasons. "The wages of sin is death," and one way to enforce this wholesome doctrine upon unchaste men is to leave them with ailing wives. This may seem hard on the women, but it is by no means proved that ovariotomy has not more ills in its train than good. On general principles, a woman is better off mentally, morally, and physically, if menstruation is allowed to run its natural course.

As to the husbands who are respecters of persons, and who remain true to their wives made sterile in this way, their lot is a hard one. I do not believe it is possible for a husband to love his wife as is her due knowing that she is physically incapable of becoming the mother of his children. And no wife can live so intimately without recognizing a difference, so that in addition to her woman's sorrow in childlessness, she is made to feel herself hopelessly outside of her husband's feelings. In mutilating her the surgeon may have made her as hateful to her husband's sight, as if she had some frightful physical blemish. How much unsexing women may have to do with increasing immorality among men, I have no means of judging, but the popularity of ovariotomy and the propensities of men make the situation serious enough for the conscientious surgeon. Nor do I know what the ultimate effect of removing the ovaries is upon the woman's sexual feelings. Dr. Goodell thought at first it made no difference, but came to change his views. Many able physicians agree with him that the operation deadens the sexual sense. This is just one of the points that gynecology must clear up. It is certainly an unusual man who marries a castrated woman. Moreover, marriage based on sense, like marriage without love, is practically a life of unchastity. This feeling dominates every woman who declines to marry a man because she can not love him as a wife should. She is unwilling to live a life of legalized prostitution, which is in plain terms simply what a great many marriages are.

So far I have spoken only of the castration of married women,

but I think the operation is even more unjustifiable when performed on a single woman, and should never be resorted to except when it is a choice between castration and death. To remove a young woman's ovaries or womb and then to tell her that she is incapable of marriage physically is a barbarous cruelty. Ethically, in mutilating a virgin in this way, the surgeon may have taken from her all chance of happiness on earth, and even her hope of heaven. Economically, as the world is constructed, many women have no other prospect in life than marriage. Besides, unless a woman has means, or education, or unusual strength of character, a single life is insupportable. And, I take it, these are not the qualities that are oftenest met with in the gynecologic wards of our hospitals. On the medical side Dr. Lusk puts the case much better than I can. Ovariotomy is not a cure; it is a makeshift, and in so far is a confession of weakness. Moreover, while aseptic surgery is undoubtedly a great advance on the old methods, it is not difficult to acquire. It is vastly easier to cut out a woman's womb than to make and keep it a healthy organ. And this is precisely the problem that is before gynecology as a science. It must first find out a way to produce a race of women with healthy generative organs, and second, it must learn how to keep all this delicate machinery in order under the immense strain of function put upon it. In many instances I believe the world would be better off if these ambitious young surgeons were put to their books. We need better trained general practitioners, not more men who can perform abdominal surgery successfully.

Now gynecology is a brilliant specialty, it offers great rewards in reputation and is money. A great many young men of all grades of intelligence and morals, are rushing into it. Naturally, they look to you as their exemplar, for your success in it has been exceptional. This is why I urge the matter upon your attention. I think your responsibility is very great. Personally, my trust in your good judgment and your heart is absolute, but these are unknown qualities in the young gynecologists who are following in your footsteps. Every day all over the land women are being mutilated at the hands of ambitious young men who are anxious to report to the profession that they can do ovariotomy or hysterectomy. I feel sure that not a few of these helpless victims might be saved present pain and future misery by a word of warning from you.

LETTER II.

You know that I feel and have felt very strongly on the subject of your letter. The time has been when to express such views as you express would condemn one to charges of "old fogyism" or ignorance. But ever since the rage for ovariotomy took possession of the medical mind, I have had an invincible repugnance to the castration of women, and have often had hard work to restrain myself when statistics "of 100 cases without a death," "my first year's work in ovariotomy," etc., were read *ad nauseam* before our Medical Society. I shall never forget the night when one of our "best operators" handed round on a plate the two ovaries of a woman recently castrated; one had a small cystic tumor about the size of an apple, while in the other the cyst was not larger than a marble. The reporter dilated on the physical perfection of the woman, on the fact that she was about to be married, and then told of his successful operation. Just think of it! And is not this gynecology in its infancy, when to cure a minute cyst or to prevent its growth, the whole womanhood, the whole happiness and all the life of this woman were irretrievably ruined? And yet no one there said one word of disapproval, but all sat and admired the skill of this destroyer of everything that makes a woman's life worth living.

A wedding took place here this spring between a recently castrated girl and a young man who had been engaged to her for a long time. Do you not think that he would rather have married her with one ovary left, even if there were a probability of ill health and suffering? The girl, from being slender and young looking, in six months had grown stout and much older and was by no means improved in appearance.

This is all but a prelude to saying how much pleased I was at the way you presented your case against the operation. I agree with you that ovariotomy, before or after marriage, ruins a woman in all the essentials of womanhood. It makes of marriage just what you say. Just think of the feeling which a man must have when he marries a mutilated woman! What does he marry for? There can be no hope and no happiness in such a union; there is no end to look forward to; there is nothing which makes marriage perfect and holy.

I wish your views could be brought to the inner consciousness of the gynecologists of the country. I wish they could be made to see and feel; but I fear many of them will think your opinions beyond the domain of science and practice and will pass them by. And then it touches the pockets. Ovariotomies are a source of income; many have grown rich on them and you strike at the root of a very thriving industry. But you should not drop your task for all this, and the fact that Dr. Kelly sympathizes with your efforts should encourage you to say and to do something to stem the torrent of mutilation.

VAGINAL HYSTERECTOMY—TWENTY-ONE CONSECUTIVE, SUCCESSFUL CASES.

BY CHARLES GILBERT DAVIS, M.D.

CHICAGO, ILL.

In looking back over the history of surgical progress it is interesting to note the process of evolution which has so gradually brought order out of chaos and from the crude methods of the past evolved the brilliant results which to-day are crowning modern surgery. It is right and just that much credit should be given to antisepsis and yet a large percentage may be justly attributed to improvement of technique and simplicity of procedure. This is an age of brevity. All the world is seeking a more direct route to the point of destination. Unnecessary complications are avoided. To no part of surgery do we find these facts more applicable than in that which relates to the abdominal and pelvic regions. It is unnecessary to state that far too many operations have been performed on the organs in these localities and that many blunders have been necessarily committed. But this great experience has not been without its beneficial lesson; we are approaching simplicity and the outlook for the future is brighter. For many years several intelligent and far-seeing surgeons have intimated that the vaginal route was far superior to the abdominal for many of the operations on the uterus and adnexa. But it has been apparently difficult to abandon the older method for the new and more successful.

Vaginal hysterectomy, as a surgical operation, dates back to the early centuries of the Christian era, but it can not be said to have been thoroughly elucidated until the year 1813, when it was performed by M. Langenbeck for cancer. Even then his medical confrères refused to believe that he had performed this operation, and it was not until some years later, when his patient died and a post-mortem was held, that his words were verified. The operation wavered awhile in popular favor and then fell into discredit when Freund, of Breslau, advocated abdominal hysterectomy. The bad success of this again brought the vaginal operation to the front in the year 1878, largely through the advocacy of Czerney, of Heidelberg. Since that period it has been gradually gaining ground, and to-day is rapidly supplanting the abdominal method as a relief for many of the pathologic conditions afflicting the uterus and its appendages. It may be employed:

1. In all cases where we determine to perform double oöphorectomy. 2. In double pyosalpinx or salpingitis. 3. In single oöphoro-salpingitis where we have unyielding, chronic metritis. 4. In severe displacements near the menopause, and all others not yielding to treatment. 5. Tumors of the uterus, interstitial or subperitoneal, not exceeding a child's head in size. 6. In all cases of malignant diseases of the fundus and cervix, when not involving the vaginal or pelvic walls. 7. In small cysts and other growths of one or both ovaries and tubes near the menopause. 8. In all cases of chronic peri-uterine

phlegmasia, with or without suppuration, not yielding to other treatment.

There are two distinct methods of performing this operation. In one the broad ligaments and arteries are secured by ligatures tied to different sections laterally as the operation proceeds. This, as the operation most frequently done by the German surgeons, may be designated as the German method. In the other no ligatures are used and the broad ligaments and arteries are secured by clamps or catch-forceps, which are allowed to remain for forty-eight hours. This is the operation usually performed in France and may be appropriately called the French operation. Its thorough establishment as a legitimate surgical method is undoubtedly largely due to the wisdom and experience of that eminent surgeon Péan, of France. Each of these methods has its adherents. I believe from observation and experience, that the practice of hemostasia by forci-pressure is superior and can be adapted to a greater variety of conditions.

In a normal case of hysterectomy I usually proceed as follows: For five days preceding the operation the patient has a daily bath of warm water and white castile soap followed by brisk and thorough friction. The vagina is also irrigated morning and evening with a sublimate solution (1:5,000). The day before the operation a mild laxative is administered and a thorough enema given on the following morning. The patient is anesthetized and placed on the operating table in the dorso-sacral position. I prefer this to the left lateral position as giving a more symmetrical view of the organs concerned. An assistant introduces the catheter, being careful to entirely evacuate the bladder. This is quite essential as lessening the risk of wounding that organ. The vulva and vaginal cavity are again lubricated with white castile soap and warm water and douched with the sublimate solution (1:5,000). A pair of ordinary vaginal retractors are now introduced antero-posteriorly and held by two assistants, who at the same time support the limbs with the thighs well flexed on the abdomen. Using a pair of light vulsellum forceps the extremity of the cervix is now grasped with the left hand and the uterus drawn down, while with a bistoury in the right a curved incision is traced anteriorly and posteriorly to the os, within an eighth of an inch of that orifice, meeting on each side a vertical incision of about half an inch in length. With a few strokes of the curved scissors and with the end of the index finger these flaps are rapidly dissected back, before and behind, down to the attachments of the broad ligaments. The uterus is now grasped by the strong Museux forceps and, by using some force, brought down while we apply on each side the clamps. After these are placed, one at a time and well locked, we may with the straight scissors cut loose the attachments of the broad ligaments between the forceps and the uterus. On making traction the uterus is now descended still more and if necessary we may apply another set of forceps and cut the remaining sections of the broad ligaments. At this period of the operation we may find it convenient to remove the ordinary retractors and employ those especially designed by Péan. They permit a better view of the deep pelvic region. In many instances when the organ is movable only one pair of clamps will be necessary for the ligaments. The dissection is now carried on beyond the fundus anteriorly and posteriorly and making traction on the cervix downward and backward, the body of the uterus is reached with the hook or crochette and easily everted anteriorly. For clamping the ovarian artery and tubes I usually prefer the curved forceps of Péan, as they can be readily adjusted without protruding into the peritoneal cavity. The ovaries, if they descend into the wound, are clamped and cut away, but if adherent and difficult to reach they are not to be disturbed. Their functional activity ceasing immediately after the removal of the uterus makes their removal a matter of minor importance.

The operation is now virtually finished. No stitches are required to close the perineum or to attach it to the uterine flaps. Better drainage is secured by leaving it open. The wound may be douched with a sublimate solution and then with sterilized water. The clamps are well looked after to see if they are securely locked and all minor points of oozing checked with hemostatic forceps. The wound is now dusted with powdered iodoform, and gauze of the same antiseptic is loosely tamponed in the vagina between and around the bundle of forceps so that they are completely enveloped in the antiseptic dressing. The whole is now surrounded with absorbent cotton and sterilized gauze. A catheter should be left in the bladder and a tube in the rectum. The patient is placed in bed, the bundle of forceps resting on a pillow made for that purpose, and hot bottles around the extremities. If there is much pain an eighth of a grain of morphin with atropin is given once or twice hypodermically in twenty-four hours. The amount may be slightly increased if there are no symptoms of vomiting. The second day, if the stomach is favorable, milk whey may be given. In forty-eight hours the clamps are removed. In doing this a slight rocking or rolling motion may be given to the instrument so as not to open the arteries. The dressing having been entirely removed, a warm douche of sterilized water may be given at once. I consider this very beneficial, in fact, quite necessary as a guard against sepsis. In the administration of this douche much care should be taken that the fluid does not pass beyond the pelvic region and so enter the abdominal cavity. Should this happen, septic material may be conveyed, and the entrance of the fluid into this region at this time is liable to produce great pain and symptoms of shock. Twice I have seen alarming symptoms arising from this cause. This accident may be prevented by making deep pressure, with one hand, above the pubis until the douche is terminated. After the douche the vagina is lightly tamponed with iodoform gauze. No speculum should be introduced for fear of distending the parts and causing hemorrhage. The douche and dressing should be repeated twice daily. The patient may now have soup, broth or gruel. The bowels are moved by an enema on the third day. On the fourth day there may be given solid food, for the patient is on the road to rapid recovery. *Alcoholics should not be given.* I regard their administration in surgical operations as detrimental. Alcohol is an anesthetic and in no sense of the word a stimulant.

But hysterectomy is not always such an ideal operation as I have pictured. The adhesions may be great and so dense as to prevent that rapid descent of the uterus which so facilitates its removal. Or we may not be able to readily antivert or retro-

vert it before applying the clamps to the tubes. In this case it is sometimes necessary after denuding anteriorly and posteriorly, to bisect the organ with the straight scissors and then to proceed slowly to remove one section at a time. Again, it may be necessary to resort to morcellation; particularly is this the case when we have to deal with uterine fibroids. This process is not usually difficult with the morcellation forceps and curved hysterectomy knives. Indeed, I regard this as one of the most legitimate methods of removing all moderately sized uterine fibroids.

The following consecutive cases are illustrative of the above description:

Case 1.—Mrs. E. E., age 36 years; admitted to Chicago Baptist Hospital, Oct. 8, 1894; married eighteen years; has had two children, the youngest being 13 years of age. No miscarriages; excessive menstruation for several years; pain in abdomen. Diagnosis, uterine fibroid, size of an Osage orange. Operation, vaginal hysterectomy by morcellation, Oct. 10, 1894. Dismissed, Nov. 4, 1894, cured.

Case 2.—Mrs. T. D., Dakota; age 33 years; admitted to Chicago Baptist Hospital Dec. 10, 1894; married six years. Never pregnant; menstruation painful; examination revealed tumor; has suffered for many years with utero-ovarian neuralgia; much treatment but no permanent relief. Diagnosis, uterine fibroid. Operation, vaginal hysterectomy, by morcellation, Dec. 12, 1894. Tumor the size of an egg. Dismissed, Jan. 21, 1895, cured.

Case 3.—Mrs. J. S., Chicago; age 48 years; admitted to Chicago Baptist Hospital Dec. 18, 1894. Irregular menses and much abdominal pain. Diagnosis, uterine fibroid. Operation, vaginal hysterectomy, by morcellation, Jan. 9, 1895. One large tumor the size of a small child's head and fundus of the uterus studded with numerous smaller ones. Dismissed, Feb. 27, 1895, cured.

Case 4.—Mrs. W. K., Chicago; age 51 years; admitted to Chicago Baptist Hospital Jan. 16, 1895; married thirty-seven years and mother of eight children, the youngest 10 years of age. Had four miscarriages; passed the menopause two years ago. For several years has suffered with severe pain in the uterine region; leucorrhea copious and offensive. Uterus enlarged to four times its natural size. Has been treated by numerous physicians without permanent benefit. Diagnosis, chronic metritis. Operation, vaginal hysterectomy, Jan. 17, 1895. Dismissed, Feb. 27, 1895, cured.

Case 5.—Mrs. F. J., Chicago; age 25 years; admitted to St. Mary's Polish Hospital Dec. 18, 1894. Had been confined ten weeks previously. Examination revealed bilateral laceration extending beyond the internal os. A part of the cervix was completely torn away. Both ovaries enlarged and painful. Constant nausea, vomiting and irregular movement of the bowels. In view of the impossibility of restoring the integrity of the womb it was decided to perform vaginal hysterectomy, and this operation was done Jan. 30, 1895. Convalescence was slow. At the end of the second week, while giving the usual evening dressing to the wound, a slight hemorrhage occurred, which at first appeared threatening, but completely subsided with hot douches. Dismissed Feb. 30, 1895. The patient has been recently seen and is found to be enjoying good health.

Case 6.—Mrs. A. F. W., Chicago; age 40 years; admitted to Chicago Baptisf Hospital Jan. 6, 1895. Married twenty-two years; has had three children and four miscarriages. Has suffered for several years with pain in pelvic and ovarian regions. Examination revealed the fundus of the uterus enlarged and increased to about twice its normal depth. Diagnosis, interstitial fibroid. Operation, vaginal hysterectomy, Jan. 30, 1895. Dismissed, March 8, 1895, cured.

Case 7.—Mrs. C. L. M., Chicago; age 40 years; admitted to Chicago Baptist Hospital March 2, 1895; married at 22 years of age. Has had two children, the youngest 11 years of age. Has never been well since the birth of last child. Menses painful and profuse. Has suffered terribly with utero-ovarian neuralgia, and as a result the entire nervous system is disturbed. Fundus of the uterus enlarged and the depth increased to over four inches. Diagnosis, interstitial fibroid with cystic ovaries. Operation, vaginal hysterectomy, March 3, 1895. Diagnosis confirmed. Tumor the size of a goose egg. Dismissed, April 9, 1895, cured.

Case 8.—Mrs. C. H., Somonauk, Ill.; age 54 years; admitted to Chicago Baptist Hospital March 2, 1895; married thirty-four years. Has had six children, the youngest 18 years of age. No miscarriages; no regular menstruation for two years; had a bloody discharge from the vagina after any unusual exertion. Constant pain in the lower portion of the abdomen. For the last six months symptoms have been greatly increased. Examination indicated presence of fibroid tumor attached to the fundus of the uterus, the whole mass appearing to be the size of a child's head. Operation, vaginal hysterectomy, by morcellation, March 3, 1895. Diagnosis confirmed. Dismissed, April 8, 1895, cured. Her husband has written me recently that her health is better than for many years.

Case 9.—Mrs. W. M. N., Keota, Iowa; age 49 years; admitted to Chicago Baptist Hospital March 19, 1895; married twenty-six years. Has had three children, the youngest 16 years of age. No miscarriages; menstruation has been irregular for the last six months. For more than two years has suffered from pain in rectum, pelvic and ovarian regions. Leucorrhea; examination revealed uterus enlarged and a cyst the size of an orange apparently attached to the left ovary. Diagnosis, chronic metritis with cyst of left ovary. Operation, vaginal hysterectomy, with the removal of both ovaries and cyst attached to left one, April 17, 1895. Dismissed, May 13, 1895, cured.

Case 10.—Mrs. E. W. C., Chicago; age 26 years; admitted to Chicago Baptist Hospital April 13, 1895; married five years. Has never borne a living child. Miscarried at the third month about four and a half years ago; menstruation regular; leucorrhea profuse, yellow, creamy and irritating; has suffered pain in the pelvic region for three years. Has had much treatment without benefit. Diagnosis, salpingitis with metritis. Operations, vaginal hysterectomy, April 17, 1895. Owing to excessive inflammatory attachments it was necessary to remove the uterus by morcellation. The operation was tedious and difficult. Dismissed, May 14, 1895, cured.

Case 11.—Mrs. B. L., Chicago; age 20 years; admitted to Chicago Baptist Hospital May 27, 1895; married two years. Has never been pregnant; suffers great pain before each menstrual period; leucorrhea creamy and profuse; lancinating pain in the region of the ovaries, particularly the left. Diagnosis, chronic salpingitis. Operation, vaginal hysterectomy, May 29, 1895. Dismissed, June 17, 1895, cured.

Case 12.—Miss E. A. S., Chicago; age 29 years; admitted to Chicago Baptist Hospital May 1, 1895. Has suffered from dysmenorrhea for fifteen years, and during all that time has never been free from pain in the pelvic region; leucorrhea profuse and excoriating; has frequently been confined to bed for weeks at a time with pelvic inflammation. Diagnosis, oöphoro-salpingitis. Operation, vaginal hysterectomy, by morcellation, June 19, 1895. Operation very difficult owing to the numerous attachments. Dismissed, July 17, 1895, cured.

Case 13.—Mrs. J. O. P., Minneapolis, Minn.; age 50 years; admitted to Chicago Baptist Hospital June 24, 1895. Has borne two children, the youngest 23 years of age. Menstruation has continued and grown more profuse, amounting at times to a hemorrhage. Watery leucorrhea. Examination revealed the neck of the uterus enlarged, patulous and nearly absorbed with a spongy growth. Constant pressure with shooting pains. Diagnosis, carcinoma. Operation, vaginal hysterectomy, June 26, 1895. Dismissed, July 31, 1895, much improved in health and apparently cured. A message from this patient one week ago says that her health is perfect.

Case 14.—Miss M. S., Valparaiso, Ind.; age 16 years; admitted to Chicago Baptist Hospital Aug. 24, 1895. Three years ago suffered from an accident, was injured in the abdominal region and since then has suffered much pain through the ovaries, particularly the left. Menstruation very irregular, and during this time had excruciating pain in the left ovary. General nervous system much disturbed; leucorrhea profuse; suffers much; no treatment has given relief and her parents requested an operation. Patient sent to me by Dr. Vincent, of Valparaiso, Ind. Diagnosis, cystic ovaries with salpingitis. Operation, vaginal hysterectomy, Aug. 28, 1895. The right ovary was found in a state of cystic degeneration and removed. The left, owing to its being imbedded in inflammatory tissues was left. Dismissed Sept, 28, 1895. Pain in the ovarian region entirely gone. Nervous symptoms very much better and gradually improving.

Case 15.—Mrs. W. N. M., Emporia, Kan.; age 26 years; admitted to Chicago Baptist Hospital Sept. 5, 1895; married seven years. One child 6 years of age. No miscarriages. Family history good; had good health up to period of birth of child. Perineum was badly lacerated during child-birth. General health began to deteriorate and she suffered with severe pain in the region of the pelvis. In 1894 had the right ovary removed by laparotomy in Kansas City. Operation gave no relief. Menstruation was irregular and painful. Constant pain in the region of the ovaries and uterus. Examination revealed

chronic metritis and salpingitis. Operation, vaginal hysterectomy, with removal of left ovary and tubes, Sept. 11, 1895. Dismissed, Oct. 31, 1895, cured. A recent letter from this patient tells me she has not had such good health for many years.

Case 16.—Miss L. P., Boulder, Colo.; age 28 years; admitted to Chicago Baptist Hospital Sept. 28, 1895. Began to menstruate at 13 years of age and since that period has never had good health. Great disturbance of nervous system. Complains constantly of backache and pain in the lumbar region. Had the left ovary removed four years ago and the uterus curetted twice in Kansas City. Suffers now from constant pain in the region of the right ovary. Menstruation regular but very painful, with increased disturbance of nervous system. Leucorrhea yellow and offensive. Diagnosis, chronic metritis with salpingitis. Operation, vaginal hysterectomy with the removal of the right ovary and tubes, Oct. 2, 1895. Patient still in hospital and the nervous system slowly but gradually improving.

Case 17.—Mrs. M. L., Chicago; age 46 years: admitted to St. Mary's Polish Hospital Sept. 11, 1895. Has had no children. For a number of weeks has had an almost constant flow; much pain. Had curettement and local treatment by family physician which failed to give relief. The uterus was found enlarged and covered with a fungus, patulous growth and had every appearance of carcinoma. An immediate operation was advised. Vaginal hysterectomy was performed Sept. 28, 1895. Recovery was rapid. Dismissed, Nov. 11, 1895, apparently cured.

Case 18.—Miss D. M. K., Fort Wayne, Ind.; age 31 years; admitted to Chicago Baptist Hospital Oct. 14, 1895. Two years ago had two operations in which the uterus was dilated for stenosis and displacement. Excruciating pain with menstruation. Diagnosis, cystic ovaries. Operation, vaginal hysterectomy, Oct. 16, 1895. Dismissed, Nov. 15, 1895, cured, with wonderful improvement of health and strength.

Case 19.—Mrs. J. T., Chicago; age 22 years; admitted to St. Mary's Polish Hospital Nov. 3, 1895. Two children. Menses regular but painful. Suffered from muco-purulent discharge for the last year and a half. Examination revealed bilateral laceration of the cervix, ovaries prolapsed and cystic. Diagnosis, chronic metritis with cystic ovaries. Operation, vaginal hysterectomy, Nov. 24, 1895. On removing the clamps in forty-eight hours the wound was found apparently in good condition. After administering the douche the vagina was lightly tamponed with iodoform gauze and the patient placed in bed. In a few minutes it was discovered that the dressings were saturated with fresh blood. She was immediately placed on the operating table, the dressings removed and a severe hemorrhage was discovered from the right uterine artery. Distending the vagina with the retractors the clots were washed away and the bleeding vessel grasped with two clamps. The dressing was renewed and the clamps left in position for an additional forty-eight hours, at the end of which time they were removed without the recurrence of hemorrhage. Slight parotiditis at the end of two weeks. From this time she made rapid recovery and was dismissed, Dec. 18, 1895, cured.

Case 20.—Miss M. B., Chicago; age 21 years; admitted to Chicago Baptist Hospital Nov. 24, 1895. During four years has suffered constant pain in the back and region of the ovaries. Bearing down with painful micturition. Examination revealed an enlarged condition of the uterus with painful swellings on either side in the region of the fallopian tubes. Diagnosis, uterine fibroma with pyosalpinx. Operation, vaginal hysterectomy, Nov. 27, 1895. Diagnosis was confirmed and a large quantity of pus, at least a pint, was removed from the tubes. The patient made favorable and rapid progress. Dismissed, Jan. 12, 1896, cured.

Case 21.—Mrs. M. M. G., Chicago; age 41 years; admitted to Chicago Baptist Hospital Dec. 2, 1895; married eleven years, widow two years. Has had two children, the youngest 7 years of age. No miscarriages. Has not been well since the birth of last child. Menstruation very painful; leucorrhea profuse, excoriating and offensive; constant pain and bearing-down sensation in the pelvic region; exceedingly nervous; uterus enlarged; entire vaginal vault painful to the touch. Diagnosis, metritis with salpingitis. Operation, vaginal hysterectomy, Dec. 4, 1895. The patient made rapid progress and in ten days all nervous and digestive symptoms had disappeared. Dismissed, Jan. 6, 1896, cured.

Not a drop of alcoholic beverage was given to any of these patients neither before, during nor after the operation. Morphin was seldom administered, and then only in one-eighth grain doses with atropin hypodermically. The clamps were always removed promptly at the expiration of forty-eight hours. Only once did hemorrhage follow this maneuver. This occurred in Case 21 and was easily controlled. Again, there was slight hemorrhage in Case 5 at the end of the second week. This was only slight, and I presume came from the vaginal wall while dressing the wound. One case, 19, developed slight parotiditis at the end of the second week but it subsided in a day or two. The temperature seldom reached above 101°. Once, in Case 18, it ascended rapidly on the third day to 105°, accompanied by great restlessness and delirium. After a vaginal douche of warm, sterilized water it soon resumed its normal course. At the usual time of menstruation the "menstrual storm" invariably made its appearance with a slight rise of temperature, but in no case were the symptoms very marked, and in no instance was there any appearance of menstrual flow.

My experience in vaginal hysterectomy leads me to believe that it has a much wider field for triumph in the future than was at first anticipated. I believe it will not only yield more satisfactory results to the honest surgeon, but that it will also spare many lives that might otherwise have been sacrificed to the more dangerous abdominal method.

240 Wabash Avenue.

HYSTERECTOMY, ITS LEGITIMACY, WHEN AND HOW.

REPORT OF A CASE INCLUDING REMOVAL OF FIBRO-CYSTIC MASS OF TUMORS, UTERUS, OVARIES, TUBES, PRECEDED BY LIGATION OF UTERINE ARTERIES.

BY R. E. HAUGHTON, M.D.
RICHMOND, IND.

Mrs. B. age 35 years, consulted me in regard to an abdominal growth and bad health as a result. So much so, it seemed that if she were not relieved soon she would not live long. It had been diagnosed an ovarian tumor and she was then as large or larger than at full term, and very burdensome. I examined her very carefully, took all the history and decided it was a cystic or fibro-cystic tumor and ought to be removed. The operation was a laparotomy and did not at first involve the idea of hysterectomy. Hence an exploratory incision was first made for completion of diagnosis. It presented the conditions and appearance of a multilocular ovarian tumor and was clearly a fluctuating one, but deviated in some particulars from the ordinary history of a simple ovarian cyst. First it developed centrally, while right or left ovarian cysts are found to begin in the right or left ovarian region, unless they are double, which is not usual. This led me to suspect I might find a fibroid or fibro-cystic development growing out from the body of the uterus. She had not menstruated for more than a year, the reason of which will appear in the sequel. This thought led me to an investigation of the possible condition, and relations of the uterus, but I was not able by any process, to find it nor reach it by any means of exploration adopted. I thought it had been lifted up out of the pelvis, and so it was found in the operation which took place for removal of growth. The tumor was both pelvic and abdominal, being a large tumor it had risen up out of the pelvis into the abdomen above the plane of the superior strait. She and her husband were fully advised as to its probable nature and the danger and risk of removal fully stated. I said to them in view of the rapid growth of late in the size of the tumor, that in consideration also of rapidly impairing health removal was the only thing left for them, beyond letting it alone and abiding consequences. They returned home saying they would decide as to the operation and notify me if it was for removal. Some days later, I was notified to go to their home and make the operation for removal.

The long laparotomy incision was made after a short exploratory one. The operation disclosed a large development of fibro-cystic tumors of various sizes from that of a child's head down to that of a small apple, growing out from about the neck of the uterus as a center and lifting the womb up and so compressing it that the usual examination failed to find it or determine where it was except that it was above. It had but a trace

left, in outline, yet sufficient to determine its structure and position. There were also almost universal adhesions to viscera and walls of abdomen, yet they could be readily detached as the operation progressed. Only about one-eighth to one-fourth of an inch of uterine structure in thickness remained. The tumor was movable and could be lifted up. The broad ligaments in sections and uterine arteries on either side were ligated close to the organ to secure them and thus prevent hemorrhage in the continuation of the operation. The broad ligaments were turned back laterally on each side like a cuff, after ligation of vessels and then after I had lifted up and forward the womb and tumor mass these lateral surfaces were united by suture, making an extra peritoneal finish of the operation. The operation of the vaginal neck was also next made by the supra-vaginal section The ovaries and Fallopian tubes were also removed, as those appendages were shrunken or atrophied. Thus we had a removal of tumor, the uterus and its appendages included and were forced to this operation, more as it did not seem possible to have removed the tumor, except by the supra-pubic method. By ligation of uterine and ovarian arteries no hemorrhage occurred during the process, and the patient was placed in bed in a comfortable position with some depression; no bleeding at any joint. She rallied well and took some nourishment in the following morning, pulse fair, reaction good, doing fairly well—quite comfortable, the morning of the second day. The external wound was closed by several interrupted sutures of silk and antiseptic compress and bandage. She began to show more depression second day in the evening, more rapid pulse, growing paleness of surface and death occurring on the third day, in the afternoon, from exhaustion as she was quite feeble and did not nourish well.

HISTORY OF FIBRO-CYSTIC TUMORS.

Whether the result could have been different in this case and others similar can only be determined by the study of the results of cases gone before, and also taking into consideration the late period of the operation in this case. Baker Brown says, he knows of no distinguishing signs between utero-fibro-cyst and ovarian cystoma. These have been recognized as a distinct class of tumors, and were first described by Cruveilhier. They have been frequently mistaken by the ovariotomist for ovarian cysts. Where the growth has been rapid and fluctuation is very evident an error may readily occur. To make a more certain diagnosis an explorative incision may be made, yet in this case it did not throw any light upon the conditions, as even the hand in the abdominal cavity will not enable the operator to determine a fibro-cyst from an adherent ovarian cyst. Koberle says that the differential diagnosis ought to be clearly made, and Wells says that a darker and less pearly blue color of the tumor would be sufficient to put the surgeon on his guard against mistaking it for an ovarian cyst. Dr. Atlee admits the difficulty of diagnosis, and says that errors are frequent even in hard fibroid tumors, but are much more common in fibro-cystic tumors. He says further: "I believe that a positive diagnosis can be made only by tapping and testing the fluid by heat." "A fluid coaguable on exposure to air is, however, said to be the most reliable test." We find that so far medical men have not been able to make this differential diagnosis unless it be by this method of tapping and examination of the fluid, which enabled Atlee to determine correctly when others quite as celebrated as he had failed, as, for instance, Wells in a case presented to him for the purpose of diagnosis. For various reasons which seemed good this test was not made, as it did not seem so much a question of the kind of tumor as the more important question: Shall it be removed? Yet if there be a question of doubt at all in the comprehension of any or all questions coming before the surgeon it is right and best to use the means of skillful diagnosis, so that nothing be left undone which might cast a ray of light upon the clouded sky of such a patient and reveal the true nature of her trouble. The question of the true nature of the tumor was raised in this case and fears entertained of its being a fibro-cystic tumor. Yet it was supposed that an exploratory incision would reveal its character rather than subject the patient to what has often proved a dangerous and fatal method of diagnosis, viz: tapping.

ESTIMATION.

I report this case because the conditions required a removal of the uterus and accessory organs, which were all involved in the widespread pathologic condition and because function was suspended, uterus and ovaries atrophied, menstruation stopped and the woman could not be more unsexed by removal than before, and finally, because it was apparent that if she could not be saved by an operation it could not be done at all. The tumor was a multilocular, fibro-cystic, of many and various sizes, from that of the size of an apple to a child's head of six months. Some of them contained fluid and some of them were solid fibroid tumors. They were arranged around the uterus as a center, springing out about the neck and body of the same, similar to a bunch of grapes or a cluster of hydatids which I once saw expelled from the uterus of large size, amid alarming hemorrhage. The entire weight after removal was forty-five pounds. Lastly, it was finally fatal on the third day, as I have stated from prostration, as I believe growing out of a long continued impaired nutrition during the history of the pathologic changes described in its development. Most likely the operative procedure added its modicum of influence as ultimate cause, but that the operation was correct in itself and successfully accomplished is a fact nevertheless now rendered certain. Lastly because it was a removal of uterus and accessory organs together with a large abdominal and pelvic growth somewhat unusual and out of the line of such cases, viz., atrophy of uterus and ovaries with consecutive arrest of function, where the removal of the growth necessarily required excision of all the organs involved.

HISTORY OF UTERINE REMOVAL.

Dr. Choppin, New Orleans (February, 1861), removed the uterus entire with one ovary and Fallopian tube and a portion of the other tube, leaving the other ovary. The woman recovered, being able to sit up on the third day. (*New Orleans Medical News and Hospital Gazette.*) Dr. Munde's (January, 1879, *American Journal of Obstetrics*) operation is described by Freund, of Breslau, with an illustrative cut, and which he calls a new method, an operation for complete removal of the uterus, in which the chief consideration is the prevention of hemorrhage and closure of the peritoneal defect. He does this by uniting the free peritoneal borders with the corresponding lateral portion of abdominal wound, thereby preventing the detachment of the anterior pelvic or abdominal peritoneum. His operations were made for cancer, of which at above date he had made ten operations; of this number only five have been published and five of the ten reported died (50 per cent.). I have referred to the modification proposed by Schroeder in Freund's operation, but as this is made for cancer of the body of the organ, and also involving the neck or mouth, one can thus make an incision which may cut clear of cancerous tissue

and by this means not complicate a possible recovery. In a case such as I have described, viz., the supra-vaginal incision is the only one that can or should be adopted if by that means the whole growth can be removed (I mean now a fibro-cystic or other tumor) by adopting it. In a paper on the surgical treatment of "Fibroid Tumors of the Uterus," of any variety involving the removal of the uterus recently, I discussed this matter more fully in comparison with others, showing that one of two methods may be resorted to, viz., laparotomy with the supra-vaginal section or the infra-vaginal method, if the tumor is not found too large; but if so found then the superior abdominal operation is the only one to be adopted if, provided, any operation is required and urgently demanded, as in the case here reported.

HEMORRHAGE AND ITS CONTROL.

This is one of the most important questions in such cases and up to the time of Martin's ligation of uterine vessels this method was not done, either for this purpose or for the limitation of blood supply to fibroid growths; and if one-sided ligation is not sufficient for such limitation of growth then double ligation may be done. In this operation of removal the double ligation may be used, securing control of hemorrhage in the after-steps of the operation. This ligation of vessels was done in case described, and when it had been made we had nothing but a vascular condition of tissue in which some bleeding occurred and this was easily controlled. One case is reported by Trenholme in which he used the ecraseur, and attributed the fatal result to it. This is a question which depends largely upon the conditions and circumstances which complicate the case, and the judgment of the surgeon.

HYSTERECTOMY, ITS LEGITIMACY.

Formerly, ten or twenty years ago, no question most likely would be raised in view of the cases which were reported as successful. Now, outside of exceptional cases, a halt may be called and the question comes back, what percentage of mortality occurs in the cases reported as a sum total. Moreover does the percentage of recovery justify such an operation, or to use a stronger term, mutilation? Before I proceed to give what seems to my mind legitimate indications for such an operation, I wish to go upon record as holding the opinion, carefelly reached, that the tendency of surgical endeavor has been in the direction of too much surgery, too much cutting, and the *mutilations*, which I think express the idea, have occurred too often, and men have endeavored to carve their way to fame and distinction without the careful estimate which should be placed upon a human life standing in the social relations of wife, sister or mother. While I record this view, I am fully aware there are cases where there seems to be no alternative but an operation[1] or death, and this alternative should be accepted before it is too late, when vital force and power are almost gone and no resources are left for recuperation.[2] This is a critical question and it requires a knowledge of all the resources of surgical means as well as a comprehension of all the sources of vitality left to the patient. In such cases as I am now describing the question of the sexual position of the patient does not enter; yet there are such cases as these where it becomes, as I regard it, a very important consideration. These questions come before surgeons at this juncture with more force than ever before, because of the considerations which arise along the line of treatment of many disorders peculiar to women, which have been more fully developed and outlined by Apostoli, of Paris. Others had preceded him, marking the way, but he has assumed a more commanding position. I refer to gynecologic electro-therapeutics. The difficulty has been that men have not comprehended the remedial power of the electric current, and have only applied it as a last resort, hoping it might do something more than had been done. In amenorrhea, dysmenorrhea, or pain so agonizing that it seems it might kill; endometritis and the discussion of fibroid tumors by electrolysis, also in hemorrhage, "where it has probably no equal in treatment," as Apostoli says. He uses the faradic current with the bipolar electrode in inflammation of the uterine and peri-uterine tissues, as metritis, para-metritis, salpingitis and salpingo-ovaritis, and even the most acute stage of disease does not contra-indicate employment of the current. Also the most severe local pain is much relieved either by the intra-uterine, bipolar electrode or the intra-vaginal, when the acute history has been passed. Apostoli assumes that 95 per cent. of his cases were improved and symptoms removed, while a fibroid tumor was not removed but rendered quiescent or latent. Dr. Thomas Keith, of London, in a paper June 8, 1889, says in regard to fibroids: "The only treatment not surgical worth consideration and free from danger is that of Apostoli." And after giving a history of the professional management by operation proceeds to say: "That hysterectomy, then, at best would appear to be a doubtful remedy for a certain class of cases, and these not the worst class of cases," viz., hemorrhagic cases. "The old spirit that at one time would have no abdominal surgery still lingers," and when other means than operative, "in the form of electrical currents are to be set aside as arrant quackery, and simply because they know nothing of its value." Another idea of those who operate most is this, that other surgeons who have made just as careful study and estimation as the specialist in surgery should not attempt an operation because he does not operate every day on some case, and hence is not so well advised. Away with the idea that one man may not minister at the altar of hygea as well as another. "Hysterectomy, which is performed every day for a disease that rarely of itself shortens life except by hemorrhage, kills every *fourth or fifth woman* subjected to it." This mortality is too much and should stop. "It is not surgery, it is humanity." Keith says: "I would give something to have back again those sixty-four women that I did 'hysterectomy' for, that I might make a trial of Apostoli's treatment upon them beside the wear and tear of flesh and spirit which those operations cost me, for in scarcely one of them was the operation simple." (*British Medical Journal.*) This operation may be performed when all other legitimate treatment has been used, as in cancer of the uterus, in sarcoma as well, when the disease has not invaded other organs, which would insure its recurrence if the patient survived the operation for removal; in fibroid and fibro-cystic tumors,

[1] I record my present view with the facts as given by Baldy and others, viz., Baldy, 34 cases, no deaths; Kelly, 70 cases, no deaths; Polk, 20 cases, 1 death; Pryor, 9 cases, no deaths; King, 65 cases, 4 deaths; Penrose, 25 cases, 1 death; making a total of 223 cases and 6 deaths. The mortality in the hands of six operators is 2 per cent.

[2] So also we agree as to the *success* and *percentage*, but what about the health and condition in which the woman is left!

when by growth they have become distressing through pressure, pain and the consequences arising upon vital, thoracic or abdominal organs. Or when there is such a constant peritoneal irritation as to produce pain or adhesions; or when by hemorrhage likely to be sacrificed. One case in which I removed the tumor in time to prevent another hemorrhage and which must have caused death if the operation had not been performed, recovered well in about thirty days.

Dr Muller says, "that while ovariotomy has been brought to a high degree of perfection, the operation of hysterectomy has not yet passed the first stages of its development." Not only has the legitimacy of this operation been doubted and denied by experienced gynecologists, and while this question is being closely canvassed, the indications and contra-indications for a resort to it are gradually becoming settled. Nevertheless so much has been done, it is now claiming a place among the very grave surgical operations, which are not easily determined and may require a very careful exploratory incision and investigation before deciding that it shall be done and when it must be done in the careful judgment of the surgeon or surgeons, carefully weighing all the conditions; then they are not justly chargeable with temerity or cruelty in offering such relief, as only remains in this operation, with a percentage at best of mortality of one in five, or 20 per cent. This is the estimate of Thomas Keith, of London, and the adhesion of Sir Spencer Wells and Keith to Apostoli's methods of treatment, being among the world's most influential gynecologic surgeons, arrested the attention of all progressive and yet conscientious surgeons. While this is true, there are two factions of men, and all are not yet convinced of the efficacy of the galvanic treatment so ably defended by Apostoli, when he says that 95 per cent. of his cases were benefited, when not cured. I have written but suggestively, and here rest the subject for the present, hoping it may be like "a pebble cast into the ocean, its tiny wave may reach either shore" of professional opinion upon this subject.

CRIMINAL ABORTION.

BY WILLIAM McCOLLOM, M.D.
BROOKLYN, N. Y.

I use the words in their legal sense, viz, the effecting of the unlawful expulsion of the contents of the womb at any time after conception before the term of gestation is complete. The very old English law made a distinction between the crime perpetrated before and after quickening. The rulings of the supreme court of several of the American States corresponded with the old English law which was abolished a half century, more or less, ago. The Pennsylvania court was one of the first to discard the old doctrine and the courts of many of the other States have progressively fallen into line, and have ruled that it is a crime to destroy embryo life after gestation has begun. Judge Coulter, of Pennsylvania, ruled that "it is not the murder of a living child which constitutes the offence, but the destruction of gestation." An attempt by a physician or other person to procure an abortion is a crime, though the effort fail and the abortion is not produced, and it renders the party criminally guilty. When a physician prescribes medicine or gives advice and allows the patient or party to believe, or gives her reason for believing that it is given for the destruction of embryo life, though he does not intend such destruction, is little better than a criminal. I have heard physicians confess to such deception without seeming to realize that they were seriously compromising honesty and integrity and countenancing sin and crime.

Criminal abortion is frightfully prevalent and the practice is apparently on the increase among professed Christian women. It should be and it is the duty of the physician to enlighten applicants for relief from pregnancy who have no adequate idea of the criminality of the act. The women of the Church of Rome are better instructed and made to keenly feel the great sin of murdering unborn human life. I might raise the question whether the clergy are doing their duty in the matter or not, but I am addressing medical men only. Let us do our duty, if our spiritual advisers neglect to do theirs, in denouncing this common crime and great sin. It is evident that women of the lower class have no adequate idea of the criminality of the act, for they unblushingly apply to the physician and to the druggist for medicine to abort pregnancy, or, in other words, to bring about the monthly sickness. Great ignorance of the criminality of the practice is manifested by educated women, but it is not ignorance alone but a downright lack of moral sense as well, which greatly needs educating. The common law at the present day does not make the destruction of an unborn child murder. I quote Blackstone on English law: "Though to kill the fetus in utero is as such by common law no murder, yet if it be born alive and die subsequently to birth from wounds received in the womb, or from the means used to expel it, the offence becomes murder in those who cause or employ them." I also quote from another distinguished jurist, Wharton, "Law of Homicide," 93: "If a person intending to procure an abortion, does an act which causes the child to be born earlier than its natural time, and therefore in a state much less capable of living and it afterward die in consequence of such premature exposure, the person who by this misconduct brings the child into the world, and puts it into a situation in which it can not live, is guilty of murder, though no direct injury to the child is proved; and the mere existence of a possibility that something might have been done to prevent death, does not lessen the crime." We are inclined to the belief that such law is not good common sense; to kill the child in utero according to Blackstone is not murder or infanticide, but to inflict such injury upon it that though it is born alive and dies in consequence of the injury it is murder.

Some years ago I attended a woman, the wife of an attorney-at-law, seven months or more advanced in pregnancy, the child stillborn; the brain had been punctured through the eye from some instrument; this was not technically murder under common law, but I bluntly charged the mother with murder in the presence of her husband and friends, pointing out the evidence of it, and there was no denial. I have repeatedly been shocked at the manifest lack of moral sense in intelligent women in applying for medicine to reëstablish the menstrual function when it was evident that they believed the absence of the menses due to pregnancy. The woman sometimes attempts to justify the act because she does not positively know that conception has taken place. The physi-

cian's excuse for giving noxious drugs or for sounding the womb when miscarriage results that he did not know that the suppression was due to pregnancy renders him not less criminally liable.

Under the older English law for an attempt to procure a criminal abortion without proof of the woman's pregnancy conviction could not take place. More recent rulings as well as amended laws now make the attempt to procure a miscarriage a crime. It has been the law of France for more than fifty years, that the proof of pregnancy is not essential to the commission of the crime. We try to excuse Christian women for asking us to terminate pregnancy on the ground of ignorance of the law of man, if not of the law of God. If they took as much pains to become enlightened in the common law regarding it as they do to how it can be accomplished with or without aid from others they would not long remain in ignorance in the matter. Physicians long in general practice know that the practice of criminal abortion is common, and that it is not confined to the laity or to the quack and the pretender. Sometimes the ordinary physician who may be a member of a regular medical society violates his duty; and the distinguished college professor without the fear of God or of sufficient fear of human law takes his large fee for the criminal act. I am not drawing on the imagination, but state what I know to be true. Such statement does not sound well, but this fearful immoral destructive practice can not be checked unless facts are stated and proclamation is made of this great evil.

I have no belief that the practice is common among physicians who have a reputable standing with the profession in the neighborhoods where they are known. The moral status of physicians is high and I trust that we have no more black sheep than the other learned professions. As we go down the scale from the higher to the lower the evil grows greater, until the criminal abortionist, who may be a graduate of a regular medical college, loses all shame and not only sends out his advertisements to the laity, but his cards at frequent intervals to reputable physicians as well. These villains would not continue to inform the medical profession at considerable expense to themselves year after year unless their business was helped by it. A little lower down in intelligence, if not in wickedness, comes the so-called midwife and the woman who prefixes doctor to her name, and poses as a dermatologist or specialist in disease of females; they flourish in many localities.

Now we come to the economical woman and her economical friend, with their skewers, steel knitting needles and other instruments of murder. Quite recently an intelligent, educated professed Christian woman whom I attended in a miscarriage in the fourth month of pregnancy, confessed without expression of sorrow or remorse that she had effected the abortion with her own hand by pushing a knitting needle into the womb, following the instruction of another young woman who had repeatedly succeeded in destroying embryo life in her own person and was kindly instructing her young friends in the art without hope of pecuniary reward. It is only necessary for me to briefly call attention to the existing criminal facts, for all physicians who have had full opportunity to observe know that the alleged statements are true, and not overdawn; true of the city and true of the country.

Much might be said of the far-reaching, demoralizing destructive influence upon woman, upon the community, upon the State, upon the world; but the portraiture of the facts, bad as they would appear, I fear would have little influence in arresting the practice. The moral sense in woman, and possibly in the medical profession as well, has degenerated as regards this matter. The physician is so related to woman in his professional duties that he can do much, if he will, to instruct her as to the law and to show her that she would be a criminal, and shock her into a sense of her duty. It is presumed that few people know that the penal code of many of the States make the woman guilty of manslaughter if she consents to the procuring of a miscarriage. I quote from section 194, New York penal code: "A woman quick with child, who takes, or uses, or submits to the use of any drug, medicine or substance, or any instrument or other means, with intent to procure her own miscarriage, unless the same is necessary to preserve her own life or that of the child whereof she is pregnant, if the death of such child is thereby produced, is guilty of manslaughter in the second degree."

When one woman advises another woman to procure an abortion, instructs her as to the method or assists her in any way in its performance, she becomes a criminal and is guilty of manslaughter.

Section 191, Penal Code of New York, says: "A person who provides, supplies or administers to a woman, whether pregnant or not, or who prescribes for or advises or procures a woman to take any medicine, drug or substance, or who uses or employs, or causes to be used or employed, any instrument or other means, with intent to procure the miscarriage of a woman, unless the same is necessary to preserve her life, in case of the death of the woman or of any quick child of which she is pregnant is thereby produced, is guilty of manslaughter in the first degree."

The field for missionary work is a large one and should be faithfully worked, both by the conscientious physician as well as by the Protestant Christian clergy, who perhaps fully understand the enormity of the sin if they do not know how prevalent it is. It is not a pleasant subject to discuss before a mixed audience. Young women could be reached, instructed and warned by a properly published circular or tract sent to them by Christian organizations at intervals, where personal instruction would not be practicable. There is little to criticise, as it relates to the laws of most of the older and some of the newer States of America. A recent ruling, June, 1895, by the supreme court of Kansas, rendering an important section of the Crimes Act as it relates to criminal abortion invalid, is a long step of about fifty years backward. The law provides that an attempt on the part of any one to abort "any woman pregnant with a quick child" "shall be guilty of manslaughter in the second degree;" this is declared inoperative and invalid "where neither the death of the child nor the mother results from the acts committed." The low moral sense of the community, as it relates to the offence, has much to do in the non-enforcement of the law. The criminal is seldom put under arrest unless the woman is murdered, and then the party, if convicted, frequently gets the minimum penalty prescribed by law. If physicians would do their duty and make complaint in all cases when it comes to their knowledge that physicians or other persons are violating

the law in the destruction of unborn human life, it would do much to lessen the practice. I have more than once made written appeal accompanied with a threat that unless I could be satisfied that the practice would stop, I would enter formal complaint to the legal authorities. Parties have responded, pleaded for mercy and given solemn promise never to again produce the miscarriage of a pregnant woman for any reason until they had held a consultation with a reputable physician, and its necessity was advised. It is not safe or best that any doctor procure the miscarriage of a woman in case of necessity until a consultation with another physician is had; such practice would protect himself against suspicion of wrong-doing, and materially help to trace and convict the criminal. So long as it is allowed the physician to produce the miscarriage or the abortion of woman without consultation the evil will not be materially checked, for the criminal abortionist is a perjurer and when under trial in court will swear if necessary to avoid conviction, that the act was performed to prevent the death of the woman from disease, pelvic deformity, or for some reason given, satisfactory to the jury. It is very easy to speak upon this shocking criminality practiced by professed Protestant Christian men and women, as well as by the ungodly, and to moralize upon the destructive influence, especially upon woman, but it is difficult to solve the question when we ask, What is the remedy? How can it be checked?

CASES ILLUSTRATIVE OF DIFFERENT FORMS OF COLOR-BLINDNESS.

CASE I.—CONGENITAL COLOR-BLINDNESS.
CASE II.—TOBACCO COLOR-BLINDNESS.
CASE III.—TRAUMATIC COLOR-BLINDNESS.

A Clinical lecture delivered before the Senior Class at the Jefferson Medical College, Philadelphia, April 5, 1895.

BY WILLIAM THOMSON, M.D.

PROFESSOR OF OPHTHALMOLOGY IN THE JEFFERSON MEDICAL COLLEGE; OPHTHALMIC SURGEON TO THE PENNSYLVANIA RAILROAD, ETC.

[Reported stenographically for the JOURNAL.]

Gentlemen:—Your Clinical Professor of Ophthalmology has invited me to address you on the subject of color-blindness. I must suppose that you have been made acquainted with the anatomy and physiology of the eye, by the teaching of my friend and colleague, Professor Hansell, who is so well qualified to instruct you upon this subject. Taking, therefore, your familiarity with these preliminary matters for granted, I will proceed at once to tell you what is meant by color blindness; and how the condition may be recognized. I will also explain the tests, and give you clinical illustration of their application. In this way, you will get a practical demonstration of the methods of examining patients who are suspected of having a defective color sense.

When we speak of congenital color-blindness, we mean that the eye may be perfectly normal in its structure, have no anomaly of refraction, and be a perfect optical instrument, except for one defect, and that is the inability to distinguish the difference between colors, which to ordinary, normal eyes is very obvious, such as red and green. It is precisely these colors, however, which have been selected for signals on the railroads and on shipboard, where failure to recognize them may cause serious loss of life and property. You will appreciate this better when I tell you that there are cases of total color-blindness in which the solar spectrum looks to the patient like a lead-pencil drawing of it; where, from red to indigo, the spectrum looks as if drawn in different shades of gray. Such cases, however, of total color-blindness are rare; indeed, I have never met with a case of this kind. On the other hand, cases of partial color blindness are common. For instance, there is blue, yellow, red, and green blindness. What is most commonly meant, at the present day, by color blindness, on account of its wide-spread and far-reaching consequences, is the inability to distinguish between red and green, or green and gray. When you realize that the individual presenting this defect to the examiner would show the same in ability to distinguish between red and green flags or lights, which are commonly used as signals at sea or on railroads, you will understand the great importance of testing the eyes of all pilots, and of engineers and brakemen particularly. The correct interpretation of those signals depends upon the ability of the engineer or lookout to recognize certain colors at sight. The white light or flag on the railroad means: "Go ahead;" the green, "Proceed with caution;" the blue, "Do not move it;" but the red light or flag means imperatively, "Halt." It is important to recognize lights at sea, for another reason, because by their aid the course is indicated in which a ship is sailing. The red light is hung at the port and the green at starboard, with a white light on the masthead. By the relative positions of these lights the direction may be known. In the recent calamity by which the steamship *Elbe* was injured in a collision in the North Sea and foundered with all on board, I am not sure that it was not due to the defect in vision of which I speak to-day. The accident occurred at night when there was no storm, and the atmosphere was clear enough for ships to see each other for a long distance before they met. It might have been due to the fact that the lookout on the *Craithie* could not tell which way the *Elbe* was going, owing to color-blindness, which prevented him from correctly interpreting the signals on the *Elbe*. So, you see that this is a matter of very great importance, especially to all of us who may have occasion to travel by land or water.

Now, we will see if we can approach this subject in some way so that you will get a clear idea of the color sense and of the relations of colors. Here, on this plate I show you a colored representation of what is commonly known as a "spectrum" "or solar spectrum." This teaches you that if you go into a dark room and make a small hole in a shutter, that the beam of light (or if passed through a prism) will break up into this arrangement of colors upon a screen, with blue light at one end and red light at the other, as everybody knows. The reason why the spectrum is formed is because a beam of white light is made up of a number of rays having different wave lengths, or rates of vibrations. Thus, the red rays at one end of the spectrum have about four hundred million millions of vibrations per second, while the violet at the other end have over seven hundred and fifty million millions. All rays under four hundred billions of vibrations per second are not perceptible as light and are known as heat rays, while those higher than the violet can not be appreciated by the human eye and are only recognized by their chemic and physical effects. Between these extremes of red and violet are found the orange, yellow, green and blue rays with

rates of vibration of four to eight billions per second.

You may ask why it is we see only a small portion of the spectrum, and that the higher and lower rays are not luminous. It is because the human eye has been evolved from lower forms of animal life, and its condition is the result of the action of external forces of nature upon it during the course of its development to fulfill the needs of the human organism. We will suppose that the light falls upon the cornea and passed through the crystalline lens and that impact takes place upon the retina. A commotion is set up among its rods and cones, the red rays and violet rays make a different impression upon the nerve endings in the cones, and this is carried backward through the optic chiasm to the part of the brain which we have ascertained, by pathologic and other observations, to be the center for vision, which is situated in the occipital lobe of the brain in the cuneus. From here it is carried on to consciousness, and if any of you, gentleman, can tell me where that is and how these impressions become conscious sensations, I shall be very much obliged to you for the information. Having traced the impression to the cortical center in the occipital lobe, there we must leave it for the present; all we know is that it is carried to the cuneus and thereafter it becomes to us conscious sensation.

Case 1. Congenital Color-Blindness.—Now, gentlemen, I will show you this case of color-blindness, in order to demonstrate the nature of this phenomenon to you. I will first give him fine print to read and thus test each of his eyes, to prove to you that they are perfect as optical instruments, and that vision is acute and accommodation normal. He says that he first learned that he was color-blind when he bought what he thought was a blue necktie, and when he brought it home he was laughed at for buying a green one. This led to conversations upon colors, which showed him there were differences recognized by others, but which he could not appreciate.

It is of interest to mention that it is to Dalton, who was himself afflicted in this way, and who a hundred years ago was a distinguished professor of chemistry, that we owe our first exact views on the subject of color-blindness. He also ascertained the peculiarity by accident. He was living at Oxford, and when he went up to take his degree he was informed that he must wear a red coat, and it being against the rule of the religious society to which he belonged, he was much troubled about it. When the coat was brought home, he thought that they had changed it for a mouse-color or drab and he was very much pleased with the shade. He thought so well of it that he not only wore it to the ceremony when he received his degree, but he also wore it in the street until his friends spoke to him about it, when he learned for the first time that the coat was red. He investigated this subject and taught the use of the spectroscope in diagnosis. After Dalton came Dr. Thomas Young, who made observations upon the color sense, which have become classic. Now, coming down to our own time, Holmgren taught us that color-blindness was comparatively common among the railway employes in Sweden, and devised a very practical test for the examination of their color sense.

Now, let us suppose that you will be called upon to examine a suspected case. It will be useless to ask him to name colors, for he has learned to apply these names which he will use in speaking, although he could not distinguish the green from the red, perhaps except by a slight difference of shade, both appearing as dark gray. Now, according to the doctrine of probabilities, if you take a large number of men, you will find that 4 men out every 100 will not be able to distinguish between red and green, or will be color-blind; whereas there are only about 4 women out of 6,000 who are color-blind. This would really show on this point, a superiority of the female sex, in the ratio of 1 in 25, in males, to 1 in 1,500 females possessing this defect of color-blindness.

We will now proceed to the test for color-blindness. The best way to ascertain the existence of this condition is to ask the subject of the test to match certain colors. Here is a mass of over a hundred small bundles of wool of different shades of green, pink, blue, orange, etc. In making then, what is known as Holmgren's test, three test colors, viz., light green, rose or purple, and red are placed in turn before the person to be examined, and he is told to select from the mass a number of skeins and to sort them according to the color.

This test will now be made upon our patient. Observe that he takes a rose-pink and lays upon it the light blues and hesitates about the grays. In assorting the colors, as requested, you can see, without asking him any questions, that he is unable to distinguish between certain colors, and especially green and red, and makes ludicrous mismatches. He reminds me of a young man who happened to be color-blind, and who describing his ladylove said that her cheeks (pink) were the same color as the sky (blue). I have no doubt that there are a number of gentlemen in this class who are color-blind, and if so, they should know it, in order that they may avoid errors and thus succeed in their professional lives. There are many things that appear differently to the color-blind physician, and we often depend upon full appreciation of color for our diagnoses. For instance, a rash upon the skin would not look the same to such an individual as to others with a normal color-sense. Chemic tests, dependent upon color changes, would be rendered uncertain and difficult to a color-blind doctor.

Here is a bundle of skeins of wool of neutral colors which our patient selects. Here is a pink, which this man calls a dirty white. If he were an engineer and should make such a mistake confusing a red with a dirty white flag, the results might be serious. Now, if we confront this man with the picture of the spectrum, we find that he can distinguish blue and yellow better than red or green. Therefore, if we divide the spectrum into four colors, red, yellow, green and blue, he can distinguish yellow and blue well and fails on the other two colors, and he has hence that form known as red-green color blindness.

Some difficulty arises owing to the partial education of the color-sense in these cases, so that we can not ask them to name the colors, or to select colors by name. But we must ask him to match skeins of worsted by placing him before this box filled with many colors, from which he must select those corresponding in color to the test skeins, but lighter or darker in shade.

The rose-pink, as you may know, is a mixture of red and blue. Therefore if he matches this with a blue, he is red blind: and if he matches it with green or gray, he is green blind. Now, you see he gives himself away in two ways; he not only matches the rose-pink with a blue, but fails to pick out the other pinks in the mass right before him. He then picks out a bright red and throws it upon the green test. This shows that his eye is incapable of responding to the four hundred million millions of vibrations in a second, which correspond with the red color. Now, if he were a doctor, and were to examine the eye-ground with the ophthalmoscope, the field would look to him as if bright green or dark yellow.

One other point should be mentioned. Nature is very miserly in her gifts and, while our color-sense is most acute in the very center of the posterior segment of the retina, outside of this portion of the retina we are all relatively color-blind. The response to the color rays becomes less decided as we pass from the center to the periphery of the field of vision in normal eyes.

As our color-blind subject sees in the spectrum only blue and yellow, he has a dichromatic color-sense, that is to say, a color-sense limited to two color sensations only. The normal sense is trichromatic: red, green and violet, which are the three color sensations necessary to produce white light. If this man should attempt to paint the solar spectrum, he would place blue at one end and yellow at the other end, with a neutral gray band between, as he has only two color perceptions. His entire color scheme of nature most correspond to this fact, and would necessarily be very different from that of other persons who have all three sensations. Therefore, his appreciation of nature is much more limited than that of those with full perceptions of color. He would not be able to pick strawberries out of a patch, or cherries from a tree, except by the form of the fruit; and in his eyes a red rose would not be very different in color from its leaves.

This examination which I have made by Holmgren's test can be very much facilitated and shortened by that instrument known as "the color-stick," which was invented by me in 1879, for testing the employes of the Pennsylvania Railroad. The simplicity of this instrument and the positive character of the results, make it valuable also for preserving records, and it has the great advantage that the test can be made with it by laymen and non-professional people. I think that it is always better to have a trained surgeon to supervise the examinations; but at the time that this system was introduced it was impossible to find a sufficient number of ophthalmic surgeons to supply the demands of the Pennsylvania Railroad, where there were about forty thousand men in the employment of the company, scattered over thousands of miles of railroad. To accomplish this result, I devised this instrument. It consists of

forty skeins of worsted, arranged in a single row, upon two sticks joined together, but which can be taken apart. Each skein has a ring and a little bangle upon which is stamped its number. Twenty of these skeins are affirmative and twenty are negative; all the affimative bear odd numbers, all the negatives are *confusion colors* and have even numbers. Now, if a person's color-sense is normal, he will select all the odd numbers, while the color-blind person will select a portion of the even numbers. As each skein is selected, it is turned backward so as to hang over the top of the stick. At the end of the examination the results are read off and entered upon a printed blank form, which is then sent to the superintendent, who can tell at a glance whether the man is or is not deficient in color-sense, by an inspection of his odd or even numbers.

Now we will give this man a skein of green to hold in his hand and he is told to pick up some others from the stick that look like it. Observe, now, that the even-numbered skeins show his mistakes. He is now given a rose-pink and told to pick out skeins to match it. The former test is confirmed by his selection again of even-numbered skeins. The result is read off immediately and recorded on the blank, and color-blindness is the diagnosis.

The new system recently adopted by the Pennsylvania Railroad is the following: The stick has been discarded and the test consists of two different sets of worsted skeins which must always be kept apart, not only in their corresponding parts of this box, but also in testing the men. The first set consists of twenty skeins, numbered 1 to 20 on bangles, these numbers being so concealed that the men can not see them. Among these numbers the odd ones (1, 3, 5, etc.) are greens, while the even numbers (2, 4, 6, etc.) are grays or light browns. The second set consists also of twenty skeins, but they are numbered from 21 to 40. Here the odd numbers (21, 23, 25, etc.) are all different shades of rose color, while the ten even numbers (22, 24, 26, etc.) consists of four blues, three greens and three grays.

The following directions are to be observed in the use of this test:

1. Examine only *one* eye at a time, by covering the other eye with a handkerchief or some other means, that will exclude it from vision.

2. Spread a white cloth, like a towel, on a table in a good light.

3. Take out all the worsteds from the green part of the box and put them on the cloth at random.

4. Take from this heap the large light green test skein which is marked *A*, and laying it to the side in a good light direct your man to select ten skeins from the heap. Tell him that they are not to be exactly like it in every respect, but that they are to be of the same color, only a little lighter or darker in shade.

5. Write down on your blank the numbers of the ten skeins selected by your man to match the test skein *A*. If only odd numbers appear which he selected promptly, then he is not color-blind; but if even numbers have been chosen, he must be more or less color-blind.

6. Ask him the name of the color he has been matching, or any other worsted, and register his answer on the blank.

7. Remove now all the worsteds and put them back in the green part of the box.

8. Now take out the second test and expose it on the table in the same way as before.

9. Show him the large rose-colored test skein, marked *B*, and ask him to match this with ten worsted in the same sense as before the first test.

10. Register his ten selections on the blank. Now any even numbers selected betray and determine definitely his color-blindness. If your man selects *blues*, with the test skein *B*, he is *red-blind;* if he selects *grays* or *greens*, he is *green-blind.*

11. Ask him the name of the test skein, or any other skein, and register it.

12. Put down whether his selection was prompt or hesitating.

13. Finally, as a control upon the test and as a substitute for the second and third color-test of the old system, there have been arranged especially for the surgical expert, two more large test skeins, one *c*, yellow, and the other *d*, blue. The test *c* is exposed and you ask your man to match it, if possible, by the skeins from 1 to 20. If normal in color-sense, he will decline or at the most only take the yellow-green skein, but if color-blind he will select a number of the green skeins, which should be recorded. Then use test *d*, the blue skein, and let him match it from skeins 21 to 40. If normal or green blind he will select blues only, but if red blind he will pick out a series of roses, which should be recorded.

The old system is now in actual use by more than forty of the principal railway corporations in this country and Europe, and over fifty-two thousand miles of railroad are now protected by it. It is used not only for those actually in service of the railroads, but also for all applicants who seek such employment. To make the examination of vision complete, records are also kept of the results after testing by Snellen's test types for sight and power of accommodation.

In Holmgren's test as originally conducted, the examination took considerable time and required an accurate knowledge of the subject on the part of the examiner. By this system of mine, the tests are quickly made and recorded, and the results are equally positive.

Now, gentlemen, I think that you are satisfied that I have exhibited to you a typical case of marked congenital color-blindness. This was probably inherited either from his father or grandfather, possibly from his maternal grandfather, since, as already mentioned, the females usually escape color-blindness. I think, moreover, that you would not like to ride in a train behind a locomotive in charge of this man as engineer, who would then be called upon to recognize all kinds of signals at a glance by night as well as by day, when as he has just told you he sees green as dirty white, and red is indistinguishable from green.

There is another easy test known as the cobalt blue test, which I will demonstrate to you. A lighted candle is held about ten feet from the patient and a piece of cobalt blue glass is held before each eye in succession, the other being closed. Now to the normal eye, the flame of the candle should be pink or rose surrounded by a blue halo, but this man tells us that he sees only one color which he calls blue, and thus demonstrates his inability to see any red color, since this glass transmits both red and blue rays.

Case 2.—Acquired Color-Blindness of Toxic Origin. I will now refer to this other case in which the color-blindness instead of being inherited has been acquired. This man for twenty years has used tobacco to excess, and he has, as the result, a central scotoma, or partial loss of vision with color-blindness over a limited area of the retina, involving the yellow spot, which is the center of most acute vision. In this large colored plate of the eye-ground, I now show you a very fine delineation of what we see at the back part of the healthy eye by the aid of the ophthalmoscope. Here is the optic disc or the entrance of the optic nerve, and here is the yellow spot, about 8 degrees to the outer side of the disc. Immediately at this point is the *fovea*, the seat of most acute vision and likewise of the highest development of the color-sense. When a man has any lesion in this region, it reduces his appreciation of both color and form very materially, if not totally. Outside of this central region everybody is relatively color-blind, the periphery of the retina being less responsive to color vibration than the center.

To prove to you the color defect, I take this red glass from the test case and place it in front of a lighted candle at six feet away; now by replacing it with green we find him unable to distinguish between green and red. I now measure the diameter of the test glass and find it 33 mm. I now bring the candle to 33 cm. (or thirteen inches) from his eye and he begins to feel the red color of the glass, and distinguishes it quite promptly if the lighted candle is moved a little from its position. When it is removed farther from the eye he is color-blind, but when it is approached, say to 25 cm. (or ten inches) he at once perceives either red or green colors, properly. Now, at 33 cm. this stick in my hand, of 33 cm. in length, covers 60 degrees of his retinal surface; the red or green glass is 33 mm. or one-tenth the size, and hence covers 6 degrees of his retina, and as he is color-blind for an object of this size, we are able to prove that within 6 degrees at his fovea he is color-blind, but if a larger portion of the retina is covered by the image of the test, it responds in a normal manner. From this, you will infer that this man would be incapable of seeing the signal-lights at night and would mistake red for green, or white for green, but that he would escape detection perhaps if tested by any colored wools, since each skein would form an *image* of more than 6 degrees upon his retinal center, and would touch rods and cones with normal sensation. Such cases are rare, and should be remembered by those who have the charge of lookouts on the water, or on railways on land. Accidents, alcohol, some of the fevers, may cause this condition and would render reëxamination of suspected men necessary even after they had once passed the color-blind examination.[1]

This, then, is a case of acquired color-blindness wieh central scotoma only, due to excessive use of tobacco; and it differs from the preceding case in being amenable to treatment by tonics, such as strychnin, etc.

[1] This man recovered his full sight both for form and color under disuse of tobacco, and internal use of strychnia. His color scotoma extended for 6° and involved the central or macular band of nerve fibers only.

Case 3.—Traumatic Color-Blindness. I have another case to show you but the termination of the hour will permit me only to advert to it very briefly. This patient sustained a severe injury some months ago. He fell down twenty or thirty feet into an elevator shaft and suffered a concussion of the brain. At this time he probably sustained a lesion of the cuneus in the cortex of the occipital lobe of the right hemisphere. It was ascertained recently that he has hemianopsia for color only. One-half his field of vision in each eye, is color-blind, while he has a perfect appreciation of color and form in the other half.

I show him to you as a case of traumatic color-blindness limited to one-half of each eye, following an injury to the occipital region. I am indebted to Dr. A. G. Thomson for this case.

With this case, I conclude the clinical remarks I wished to make upon these three patients, which will illustrate the congenital, the acquired and the traumated forms of this very interesting and very important condition of so-called color-blindness.

HYSTERIC BLINDNESS AND PSEUDO-MENINGITIS, WITH REPORT OF A CASE TREATED BY HYPNOTISM.

BY HUGH T. PATRICK, M.D.

PROFESSOR OF NEUROLOGY IN THE CHICAGO POLICLINIC; INSTRUCTOR IN CLINICAL NEUROLOGY, NORTHWESTERN UNIVERSITY MEDICAL SCHOOL; CONSULTING NEUROLOGIST TO THE ILLINOIS EASTERN HOSPITAL FOR THE INSANE; ETC.

CHICAGO.

Hysteric amblyopia with contracted visual field and dyschromatopsia is common, monocular amaurosis is less common and hysteric total blindness is rare. Gilles de la Tourette in his recent work[1] refers to only eight cases as already published, viz., Landouzy, two cases;[2] Briquet, three cases;[3] Marlowe,[4] Würdeman[5] and Levy,[6] each one case; and in looking up the references I find that the case of Würdeman is not a case in point, but one of hysteric deafness. To these I have been able to add fourteen more from the literature beside my own. Harlan[7] refers to a case cured by the application of an imaginary magnet and to another which occurred in the practice of Dr. Agnew. Jeaffreson,[8] two cases; Moore[9] mentions a case occurring in the practice of a colleague. Brown,[10] one case, although it is not reported as one of hysteric blindness; Buzzard,[11] one case; but it is not stated positively that the amaurosis was complete. Dujardin-Beaumetz and Abadie,[12] Thompson,[13] Mendel,[14] and Oppenheim,[15] each one case, the latter's patient having had thirteen attacks in ten years, one of them lasting a year and a half. Gowers[16] reports a case in which there were several transient attacks. I have included in this category two cases reported by Barkan,[17] although in each instance a careful examination revealed perception of light on one side. Since the foregoing was written Mitchell has reported a case.[18] A more extended search would possibly bring additional cases to light, especially from the older literature cases recorded as simulated blindness and malingering, for prior to the investigations of the French school these cases were not generally understood, and even now there are physicians who can not, or at least do not, distinguish between patients who see but who do not know it, and those who see but will not tell it. But in considering the cases we have only to remember that hysteric amaurosis is simply an hysteric anesthesia, produced by the same processes and amenable to the same laws as other hysteric anesthesiæ. There is no essential difference between monocular blindness with binocular vision and total anesthesia of the hand which still allows the patient to tie a bow beneath her chin with unimpaired dexterity. Some of the older cases of "reflex blindness" from slight injury of the eye or from irritation of the fifth nerve were doubtless hysteric.[19]

The diagnosis of hysteric blindness is usually not difficult if the physician simply bear in mind the possibility of its occurrence and have a fair knowledge of the symptomatology of hysteria. What may be called the negative symptoms are first to be considered. The pupils are ordinarily normal, the fundi oculi are normal as are also the cranial nerves; the corneal and lachrymal reflexes are present and the interrupted galvanic current causes flashes of light as in a normal eye; but it must not be forgotten that exceptions have been noted to all these rules. In Mendel's case the pupils sometimes responded to light and sometimes were fixed; one of Harlan's cases had rigid pupils as did also that of Dujardin-Beaumetz and Abadie, and in Levy's and one of Barkan's cases they reacted sluggishly. In Levy's case also the corneal reflex was lost and the eyes turned upward and to the left, and in one of Jeaffreson's cases there was no light-reflex to the galvanic current. The fact that the blindness is not due to changes in the intraocular structures does not preclude the fortuitous presence of such changes; for instance, Gilles de la Tourette alludes to a case with syphilitic choroiditis. Hysteric strabismus, ptosis, facial paralysis and deviation of the tongue have been observed and there is nothing to exclude the possibility of any one of these complicating hysteric blindness. Donath,[20] in a case of hysteria under observation for four months, found that sometimes one pupil, sometimes the other did not respond to light and this was accompanied by paralysis of accommodation, but there was no amaurosis. S. Weir Mitchel[21] reports a peculiar instance of hysteric amblyopia almost reaching amaurosis in which the pupils reacted sluggishly and at times that of either eye only to light let fall upon the retina of the opposite eye. In making the diagnosis it is to be remembered that a lesion of the brain may cause total blindness with normal pupils and fundi if the focus of disease be bilateral, situated posterior to the corpora quadrigemina, and large enough to destroy the visual centers or cut the optic radiations on both sides; but a lesion of such magnitude whether due to hemorrhage, softening, inflammation, abscess or a new growth would cause other and marked concomitant symptoms, and therefore another necessary negative symptom of hysteric amaurosis would be the absence of other signs of such a lesion. The positive symptoms to be considered would be those of hysteria but I shall stop at the barest mention of the principal ones. Anesthesia,

[1] Traité de l'Hystérie. Paris, 1891.
[2] Traité de l'Hystérie. Paris, 1846.
[3] Traité de l'Hystérie Clin. et Thér. Paris, 1859.
[4] N. Y. Med. Jour., Feb. 9, 1889.
[5] Med. News, Feb. 14, 1891.
[6] Ueber hyst. Amaurose. Inaug. Dissert. Berlin, 1890. Abstract in Neurolog. Centralb. Sept. 15, 1890.
[7] Med. News, Jan. 11, 1890.
[8] Lancet, April 13, 1889.
[9] Internat. Clinics, II, second series, p. 315.
[10] Northwestern Lancet, Oct. 15, 1890.
[11] Diseases of Nerv. Syst., p. 91.
[12] Soc. Méd. des Hôp. 1879.
[13] Transactions Med. Ass'n Missouri. 1893, p. 166.
[14] Deutsche Zeits. f. prakt. Med. 1874. No. 47.
[15] Lehrbuch der Nervenk. Berlin, 1894.
[16] Diseases of Nerv. Syst. Vol. II, p. 165.
[17] Zwei Fälle von vollenständiger Erblindung in Folge von männlicher Hysterie. Heilung. Festschrift zum Fünf-und-zwanzig Jährigen Jubiläum des Vereins Deutscher Aerzte zu San Francisco. 1895.
[18] Med. News. Aug. 24 and 31, 1895.
[19] Vid. J. Santos Ferdandez, Amer. Jour. Med. Sciences, January, 1891.
[20] Deutsche Zeitsch. für Nervenh. Bd. II, p. 217.
[21] Med. News, Jan. 28, 1893.

hyperesthesia, monoplegia, hemiplegia, paraplegia, contracture, tremor, chorea, stuttering and other affections of speech, disturbance of the special senses, convulsions and the general mental state, any of these bearing the characteristics known to belong to hysteria; vaso-motor phenomena, loss of pharyngeal reflex, and especially anesthesia of the conjunctiva and eyelids are to be mentioned and always sought for. The mode of onset might be of diagnostic worth; blindness coming on suddenly after great psychic disturbance or gradually as a concentric and increasing contraction of the field of vision with dyschromatopsia, or following an etiologic factor sufficient for auto-suggestion but inadequate to produce blindness otherwise, as a slight traumatism, atropin dropped into the eye or association with a blind person, would indicate the hysteric nature of the affection. But hysteric amaurosis may come on without ascertainable cause (possibly during the night) in a person who has never shown any signs of hysteria and who is found to bear none of the stigmata; that is, the case may be an example of primary, or initial, mono symptomatic hysteria. We must then depend entirely upon the negative signs and it is particularly in these cases that hypnotism may come to our aid in diagnosis as in treatment. Hysteric blindness is to be differentiated from that of exhaustion or anemia and if it follow an injury, especially in the vicinity of the eye, with profuse hemorrhage, the diagnosis might at first be difficult. Neither is the hysteric affection to be confused with the blindness of ophthalmic migraine, that is, migraine with marked disturbances of vision. These consist ordinarily of scintillating or central scotoma, amblyopia, or hemianopia not infrequently accompanied by disturbances of speech. There may also be visual hallucinations or transient blindness. Charcot and Babinski[22] have attempted to show that this affection is sometimes hysteric but, however that may be, the blindness is totally distinct from hysteric blindness. We might have an hysteric ophthalmic migraine accompanied by an amaurosis that could not be called hysteric, and we might have an hysteric amaurosis following a migraine not in the least hysteric. The pathology of the two affections is entirely different. The one is of purely psychic origin, the other due to a disturbance, probably circulatory, of the visual centers. There is another psychic blindness that is to be distinguished from the hysteric, although the lines of division may blend in individual cases. This I am tempted to call the blindness of insanity and is simply a delusion entirely comparable to the ordinary delusions of the psychoses. These cases again shade off into those of photophobia, blepharospasm, etc., in which the patient fears the light, can scarcely open the eyes, may believe that he is blind but can see if he can be made to look.

Hysteric pseudo-meningitis, a knowledge of which we owe almost entirely to our French confrères, was first described as such in 1873 independently by Arnozan[23] and Saint-Ange,[24] although Briquet fifteen years previously had written of hysteric headache accompanied by chills, vomiting and sometimes fever. The principal later contributions have been by Dalché,[25] Chantemesse,[26] Macé,[27] Pitres,[28] Bardol,[29] and Brugère,[30] although a number of cases have been reported by other observers in France, Germany and England; none, so far as I know, in this country. I shall give here but the briefest résumé of the subject and pass rapidly to the report of my case which is, I believe, unique in showing the combination of this symptom-complex with hysteric amaurosis.

Hysteria may present a clinical picture so similar to acute or subacute meningitis as, for a time, to make a correct diagnosis impossible. There may be constant headache, vomiting, retracted abdomen, rigidity of the spine, opisthotonos, double vision, great prostration and mental hebetude, delirium or somnolence, retention or incontinence of urine, convulsions, with fever and rapid or subnormal pulse. Furthermore, the vomiting of hysteria is like that of meningitis, spasmodic, projectile, generally without nausea or gastric pain. The fever of meningitis is ordinarily moderate and irregular or rapidly fluctuating; the same may be said of that of hysteria. In hysteric psuedo-meningitis temperatures of 101, 101.5, 101.8, 102.5 and 103.1 degrees F., have been observed and a pulse-rate as low as 48. The diagnosis must generally be made by means of other symptoms of hysteria (as indicated in connection with hysteric amaurosis) although in some cases the entire absence of fever and abnormality of the pulse indicate the character of the affection. In most instances a careful search has revealed hysteric stigmata. In Charcot's case a rythmic chorea at once gave the clew. In one of Guinon's cases it was the general conduct of the patient that indicated the nature of the malady. Occasionally only the sudden recovery of the patient has changed the diagnosis to hysteria. In one case Chantemesse demonstrated an inversion of the ratio of the urinary phosphates, such as was found by Gilles de la Tourette and Cathelineau[31] to be characteristic of an hysteric attack. As Gowers has pointed out, the strabismus of hysteria is nearly always convergent, of both eyes and spasmodic, while that of meningitis is paralytic and not equally convergent on both sides from the first. In the hysteric affection with pain in the head a hysterogenic zone may at times be found on the scalp. In a doubtful case where the question of tubercular meningitis is to be considered the tuberculin test for tuberculosis might be tried or tapping the spinal canal with examination of the fluid for bacilli. The pupils are generally and the fundi oculi always normal, but these signs are of small negative value. The pulse in the hysteric affection may be rapid, normal or slow, but has never been observed to be irregular. Indeed as there is no pathognomonic symptom of meningitis and no one symptom is necessary to make the diagnosis, neither the presence nor absence of the disease can be affirmed from one symptom.

Case.—C. J., a Swedish servant girl, aged 30, was brought to the Policlinic Hospital, Monday, Oct. 26, 1894. The preceding Friday she had been taken with a severe pain in and above the left eye. The pain continued and she rapidly lost vision, first in the left eye, then in the right and when she entered the hospital she was totally blind. She was seen by the ophthalmologists, Drs. Coleburn, Mahoney and Wilder, who, finding no local trouble to account for the blindness, the following day referred her to me. I saw her, for a few minntes only, the same evening. Her pulse was 120, temperature 100 degrees F., tongue thickly coated; there was evidently marked prostration and considerable mental hebetude. When ques-

[22] Archives de Neurol., 1890. Vol. 20, p. 305.
[23] Gaz. Méd. de Bordeaux. 1873, p. 250.
[24] Ibid. 1873, p. 292.
[25] Gaz. Méd. de Paris. Jan. 17, 1885.
[26] Thèse de Paris, 1884, and Soc. Méd. des Hôpitaux, May 28, 1891.
[27] Thèse de Paris. 1888.
[28] Leçons sur l'Hyst. etc. 1891. Vol. I, p. 198.
[29] Thèse de Paris, 1893, and Rev. Mens. des Mal. de l'Enf. XI, p. 296.
[30] Thèse de Bordeaux. 1893.
[31] La Nutrition dans l'Hystérie; Prog. Méd. 1890.

tioned she complained of extreme pain in the head, worse on the left side, especially in the frontal and temporal regions; the pain extended to the face, back of the neck and to a certain degree down the spine and there were some fugitive pains in the extremities. Marked tenderness to percussion was present all over the left side of the head and face except the inferior maxillary region, and to a lesser degree on the opposite side and along the upper spine. Cutaneous hyperesthesia was also marked, greatest where the pain was greatest but to some degree over the entire body. The head was not retracted but there was rigidity of all the extremities and the deep reflexes were abnormally brisk. The abdomen was not retracted but the patient was constipated and had vomited some. She was totally blind in both eyes. There was no perception of candle-light even as condensed by a two-inch lens, nor did the eyes follow the light or show, by other involuntary movement, recognition of the illumination. The fundi were normal, the pupils reacted promptly to light from all parts of the field and there were no ocular paralyses. Other cranial nerves were apparently normal except that she was totally deaf in the left ear. This deafness had come on since the beginning of the attack. As before stated, there was marked general weakness, but no localized paralysis and no anesthesia was discovered. There had been no convulsions. Thoracic and abdominal viscera were normal except a small patch of broncho-vesicular breathing below and internal to the angle of the right scapula. She was menstruating and the pelvic viscera were not examined. The foregoing data were too conflicting to allow of a positive diagnosis at once and I made none. I think it will be allowed that with a temperature of 100 degrees F., pulse 120, excruciating headache, pain and rigidity back of the neck, vomiting, constipation, foul tongue, hyperesthesia and increased reflexes it looked much like cerebro-spinal meningitis. But this would not account for the blindness without other ocular trouble, nor for the deafness without involvement of the facial. A meningitis with an abscess in the occipital region might have been invoked to explain the symptoms but the abscess would have to be large enough to destroy the visual centers in both hemispheres or cut the optic radiations of both sides posterior to the corpora quadrigemina. But there was no discoverable source of infection and the blindness had come on within forty-eight hours, too quickly for the development of such an abscess. An ice-coil was ordered to the head and the next morning found the patient rather more comfortable but in much the same condi as the previous evening. A more careful examination now showed that although she was deaf in the left ear and heard perfectly well with the right, yet when I spoke loudly into the left ear, the right remaining uncovered, she heard nothing. This was strong evidence, not of simulation, but of hysteria, and a prolonged search for stigmata finally revealed to the right of the sternum between the second and third ribs a spot of anesthesia about the size of a silver quarter. As I continued to examine and to try to accurately define this area it grew in extent until it reached the opposite side and up to the neck. I now felt reasonably sure of the diagnosis, or at least part of it, and as I had secured the attention of the patient by the examination of sensation, I immediately hypnotized her by simple suggestion. Fortunately, she was a good subject, although never hypnotized before, and in a few minutes suggestion had greatly ameliorated the pain and tenderness. The hypnosis with suggestion for the pain and tenderness was repeated in the evening with excellent results. The next morning she was quite comfortable and had a faint perception of light with the right eye. She was hypnotized and told that she could count fingers with this eye and on being awakened she was able to do so readily. A repetition of the treatment in the evening enabled her to read print. The left eye was still completely blind, but one sitting gave her perception of light, and the eye now followed the candle as it was moved about. The next morning she was given three sittings, one immediately after the other, enabling her in turn to count fingers, read print (left eye) and hear perfectly with the left ear.

She remained in the hospital about six weeks but the further history may be summarized. No very severe symptoms appeared, but she was troubled by a number of minor ailments, some of them very annoying. Aching pains in the back, abdomen, chest and extremities, anorexia, emesis, constipation, insomnia and once retention of urine for a day and a half, at the end of which time it was drawn, were some of the symptoms. They all came and went and varied in intensity without apparent cause, and were generally temporarily relieved by hypnotism, except the retention of urine and constipation. In connection with this case there are a few points that would seem, perhaps, to merit a more special mention.

Relation of the Headache to Loss of Sight.—Careful inquiry elicited the fact that the attack began as an ophthalmic migraine, that is, a severe headache with scintillating scotoma, or at least a play of lights and colors that she could not accurately describe; further, that about January, 1893, up to which time she had been perfectly well, she had a severe headache over and in the right eye, with impaired vision for a few days. About nine months before the present illness she had had a second and more severe attack on the left side, with complete blindness of the left eye lasting two or three weeks, and vision was still somewhat impaired when this last attack occurred, in which the pain distinctly preceded the visual trouble. Furthermore, during her stay in the hospital the most constant of her troubles was headache, and it invariably affected the visual function. When it was intense, as it was on one or two occasions, she would be unable to count fingers; if it were of moderate severity she would be unable to read ordinary print; when she had no headache her visual acuity was practically normal. The pain in the head was almost exclusively on the left side and it was as invariably the left eye which displayed the amblyopia. This difficulty in seeing could always be relieved by hypnotism, but what is of greater interest is the fact that suggestion directed against the pain *alone* would improve the sight. Again, when the pain was rather severe she had in addition to more or less amblyopia, marked dyschromatopsia, green and blue being lost, with greatly contracted fields for red and white. Relieving the headache by suggestion, not a word being said about vision or colors, never failed to remove the dyschromatopsia and enlarge the previously contracted fields. With the amblyopia she had at times diplopia or polyopia monocularis, which was also banished by relieving the pain. All of this goes to support the modern doctrine that hysteric manifestations are of purely psychic origin and due to the development of a sub-conscious imperative conception, the "idée fixe subconsciente" of the French. I do not like the term, but it seems better than any current one to express the process in these cases.

The Fever.—As before noted, the girl had a temperature of 100 degrees F. when first seen, and during almost her entire stay in the hospital it remained elevated. It was generally about 99 degrees F., never exceeded 100 degrees F., but seldom fell to the normal. At the same time the pulse was somewhat accelerated. The question of hysteric fever has been a bone of contention among pathologists and clinicians for more than a hundred years (Pomme, 1760-1782) and although its existence would now seem to be an established fact, yet in these days of recognized multifarious infection it must be repugnant to most of us to make, in any particular instance, this diagnosis. I have been loath to do so in my case and can only say that no other cause could be discovered. There seemed to be no probability of a malarial element in the case, but she was given an active course of quinin and arsenic. Although she was at times constipated, yet the bowels received attention[32] and I

[32] I saw some years ago in consultation a case of hysteria in which the attending physician had made a diagnosis of meningitis, and in which the fever was doubtless due to intestinal intoxication.

think intestinal infection may be excluded. She coughed at times, but râles were never heard and the cough had all the characteristics of a nervous affection. No sputum could be obtained for examination. The small area behind where respiration was slightly bronchial in character remained unchanged weeks after her fever had left. In short, no source of infection was discovered. Her temperature, moreover, was irregular, rose and fell without any apparent cause and eventually disappeared rather suddenly.

The Relations of the Case to Hypnotism may be very briefly stated. The patient went to sleep promptly at the first attempt; but it should be added that a friend had been treated by hypnotism in Stockholm so it was not entirely unknown to her. It was an efficient diagnostic and therapeutic aid although the diagnosis might have been made without it and other treatment might have been equally effective, if less rapid, in producing the desired results. Although hypnotic suggestion was so effective the patient was never unconscious and afterwards could remember all that had been said to her. For instance, she recalled perfectly being told that she could feel nothing with her left arm, but did not know that I had thrust a pin into it. I tried once one variety of what has been called hypnotism at a distance, although in this case as, I think, in all others, it was an instance of simple suggestion. As before noted, she suffered from insomnia and one morning I told her—not during hypnosis—that at nine o'clock in the evening she should think of me, imagine me with her in my usual place, count nine, and that when she reached nine she would fall asleep, as I would put her to sleep from my home. She did as directed and it succeeded admirably.[33] She subsequently tried this a number of times of her own accord without avail. I also tried post-hypnotic suggestion; this several weeks after she had left the hospital. During hypnosis I raised her arm and told her it was rigid and would remain so after she should awake until I should give her permission to lower it. When awakened the arm remained above her head. At this juncture I was called from the room and on my return after a few moments I found her just as I had left her. After some conversation, I asked her what her hand was doing up there and she replied with a rather shame-faced expression, "you know well enough I can't put it down."

The patient one day, several weeks after having left the hospital, asked me if I was the doctor who told her at the time she was blind to make a face at him (I had done so to test the facial) and I then learned that that was the only incident of my first examination that she remembered, there having been, as stated, considerable mental hebetude. I hypnotized her and then with some urging she recalled most of the details of the examination, and what is of greater interest, could remember them after coming out of the hypnosis.

These seemingly unimportant details are cited to show that the most profound hypnosis is not necessary for effective suggestion.

Venetian Building.

[33] Needless to say I did not think of her at all and that the process was one of auto-hypnosis.

PASTEUR'S birthplace, the town of Dole in the Jura, has appropriated $1,000 for a memorial to him, and solicits subscriptions from abroad to make it a worthier testimonial to this famous scientist.

AUTOSCOPY OF THE LARYNX AND OF THE TRACHEA.

Demonstrated before the Academy of Medicine in Cincinnati.

BY M. THORNER, A.M., M.D.

PROFESSOR OF CLINICAL LARYNGOLOGY AND OTOLOGY, CINCINNATI COLLEGE OF MEDICINE AND SURGERY; LARYNGOLOGIST AND AURIST, CINCINNATI HOSPITAL, ETC.
CINCINNATI, OHIO.

Dr. Alfred Kirstein, of Berlin, has of late perfected a method of examining the air passages without the aid of laryngeal mirrors, which he calls *autoscopy*. This word indicates, according to the inventor, a method by which the interior portions of the larynx and trachea *themselves*, can directly be seen, and *not* their *image*, as we are wont to see it in the usual way of laryngoscopic examination. The writer has seen some of the early experiments with this method, and has been able to watch its development to the present state of perfection; and from these observations as well as from his own experiences with this method, he is prepared to say that the autoscope must be considered, to say the least, a very important addition to our armamentarium.

The development of this method from its beginnings is very interesting as it appears in the early publications of the inventor.[1] His first communication on this subject began with the words: "The usual method of laryngoscopy does not show us the larynx itself, but its reflected image. I have discovered, however, that the interior of the larynx is open to direct inspection in a great number of people; many manipulations in this region can be done under direct supervision of the eye, without the aid of mirrors, prisms or similar appliances." His instrument then consisted of a metallic tube, about 25 cm. long. It was introduced behind the well-cocainized epiglottis, while the patient was in the horizontal position with the head hanging over the edge of the table; and for better fixation, a Mikulicz-Rosenheim esophagoscope was previously introduced into the esophagus. It was possible by illuminating the laryngeal tube with electric light, to get a good view of the interior of the larynx.

But what a torture such an examination must have been to the patient! And what a difference between these first experiments and the present method of examination! I shall not detail all the different steps of evolution of the autoscope, but simply say that autoscopy as it stands now is the logical outcome of these early attempts.[2] The fundamental change from these to the present method consists in the substitution of the laryngeal tube by a spatula; and by the application of the fact that it is sufficient in some people to push the tongue downward and forward with an ordinary tongue depressor, to get a view of the epiglottis, the interior of the larynx, and sometimes even of the trachea. This fact is well known to everybody who works a great deal with the tongue depressor. It has been made use of by Reichert, when, in 1879, he described his method for

[1] Laryngoscopia directa und Tracheoscopia directa (Besichtigung des Kehlkopfes u. d. Luftröhre ohne Spiegel), Eine vorl. Mittheilung. Allg. med. Centr. Zeitg., 1895, No. 34. Autoskopie d. Larynx u. d. Trachea (Besichtigung ohne Spiegel), Berl. klin. Wochenschr., 1895, No. 22. Autoskopie d. Larynx u. d. Trachea. Archiv f. Laryngologie u. Rhinologie. Bd. iii, 1 u. 2 Heft. Autoskopie des Lar. u. d. Trachea (directe Besichtigung ohne Spiegel), Sitzungsbericht d. Versammlg. süddeutscher Laryngologen zu Heidelberg am 4. Juni, 1895. München. Med. Wochenschr., 1895, No. 28.

[2] Fortschritte in der Untersuchung des Rachens und des Kehlkopfes ohne Spiegel (Autoskopie), Allg. med. Centr. Ztg., 1895, No. 48. Meine verbesserte Methode der Autoskopie der Luftwege, Allg. med. Centr. Ztg., 1895, No. 51. Autoskopie der Luftwege (Selbstschau, Besichtigung ohne Spiegel), Therapeut. Monatshefte, Juli, 1895. Autoskopie der Luftwege, Deutsch. med. Wochensch., 1895, No. 38.

the elevation of the epiglottis in laryngoscopic operations,[3] which mainly consists in firm pressure upon the root of the tongue andthe median glosso-epiglottic ligament, whereby the epiglottis is readily elevated. Add to this the possibility of placing the body in such a position that the longitudinal axis of the laryngo-tracheal tube forms a straight (instead of an angular) line with the axis of the buccal cavity, and you have the two main conditions for the execution of this method.

The instrument, called by Kirstein the autoscope, consists of three parts, viz.: the spatula, the sliding hood and the handle.

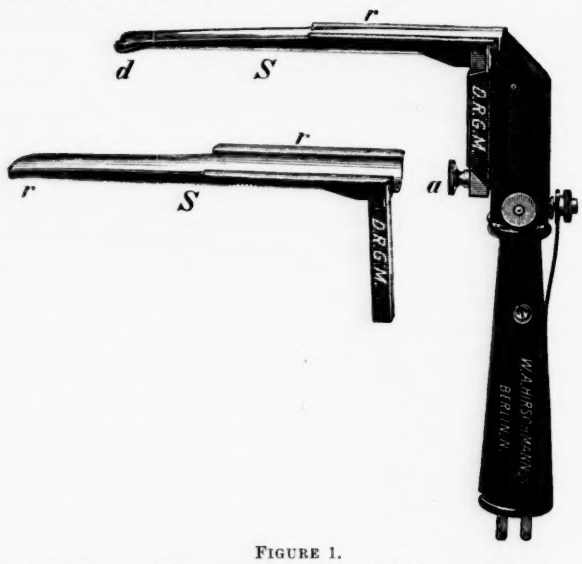

FIGURE 1.

The spatula (Fig. 1, S.) is a slightly concave metal plate of 14 cm. length, which is in the main straight, but is slightly curved doward toward its laryngeal end (d). This extremity has also a somewhat thickened lip, and has well rounded edges to prevent injury to the parts with which it comes in contact. Here its width is about 1.5 cm., while the other, the proximal extremity, is about 2.5 cm. broad.[4] At this end there descends at a right angle from it a square metallic bar by which it is connected with the handle by means of a set screw (a). The sliding hood (Fig.

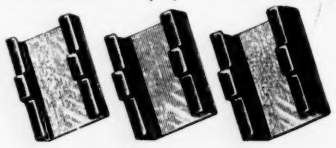

FIGURE 2.

2) is 6 cm. long, and 3 cm. broad, is made in different heights, and is attached, by means of a sliding arrangement (Fig. 1, r), to the proximal extremity of the spatula. The hood serves the purpose of keeping the teeth, the lips and, in man, the mustache away from the spatula, leaving thus sufficient space between the two plates for inspection and for the introduction of any instrument. As handle most convenient the well-known electroscope of Casper is used, to which the spatula is attached at a right angle. This instrument contains a small electric lamp, the light of which is focused through a convex lens, and then deflected ninety degrees by the aid of a prism; thus the light is thrown along the spatula, in the direction of the laryngeal cavity, which is brilliantly illuminated.

The technique of the examination is the following: The physician stands before the patient, who is seated on a chair (Fig. 3), with the neck slightly inclined forward. After connecting the electroscope with a battery, the circuit is closed by pressure upon the button, and the illuminated instrument is introduced into the mouth in exactly the same manner as in applying an ordinary tongue depressor. This is the first position, or pharyngoscopy, by which the usual picture of the buccal cavity and of the oral pharynx may be inspected.

In the second position (autoscopy of the lower portion of the pharynx), the spatula is gently pushed further backward, and the handle is gradually elevated, while a firmer pressure, directed downward and forward, is being made upon the base of the tongue. During this whole procedure the physician must by no means omit looking steadily along the well-illuminated instrument. It is now easy to overlook the entire anterior surface of the epiglottis with its ligaments and the valleculæ, a larger portion of the posterior and lateral walls of the pharynx, and sometimes also the arytenoid cartilages and the pyriform sinuses.

FIGURE 3.

This photograph was taken from a partly stripped patient in order to show distinctly the position of neck and head during examination.

For the third position (autoscopy of the larynx and the trachea), the handle is still more elevated, so that the plate of the sliding hood comes in contact with the upper incisors, whereby, however, every pressure on the teeth must be strictly avoided, and while the laryngeal end of the spatula now firmly depresses the base of the tongue in a downward and forward direction great care must be taken to not use the upper incisors or the alveolar process (in case a set of artificial teeth has been previously removed), as a fulcrum in order to exercise a firmer pressure upon the base of the tongue by leverage. During this procedure the slightly notched distal end of the spatula is receiving the median glosso-epiglottic ligament, upon which by means of the curved and thickened extremity of the spatula considerable pressure is exercised, whereby the epiglottis is elevated, so that the laryngeal cavity is now open for inspection. The arytenoid cartilages, the ventricular bands, the vocal cords, the interarytenoid fold, and the subglottic space are now readily seen. To examine the trachea the patient must stretch his neck a little more forward, without elevat-

[3] Archiv für klin. Chirurg., Bd. 24, 1879.

[4] The original instrument had a somewhat shorter, and decidedly broader, spatula, the laryngeal extremity was also not as much curved downward. The description and measurements given here are those of the last improvements.

ing or dropping the head (Fig. 3), so as to allow the axis of the laryngo-tracheal tube to come into a straight line with the axis of the buccal cavity. It is then possible to inspect the whole trachea down to the bifurcation, and the beginning of the bronchial tubes. The division of the examination into three positions is entirely arbitrary, and the various steps of an examination should never be done in an abrupt manner; on the contrary, it will ordinarily be carried out without any interruption, and with one or a few quick movements, and requires usually but a few seconds.

There may be a few obstacles to this method in some patients. Some people have such an irritable throat that they have to get use to these manipulations. In others again it is impossible to elevate the epiglottis sufficiently by pressure upon the base of the tongue. For such cases a special spatula has been constructed, the laryngeal end of which does not descend, but is level with the body of the spatula, and perfectly smooth. This spatula is introduced behind the epiglottis, which must have been previously well cocainized, and in this manner the epiglottis is elevated. In all other cases one must be particularly careful not to introduce the spatula behind the epiglottis as this causes wretching and coughing, and renders an examination impossible. In case of operative procedures the instruments (for instance curette, forceps, etc.) introduced into the larynx keep the epiglottis elevated. It goes without saying that instruments for autoscopic operations must be especially constructed for this purpose, *i. e.*, having a long (about 20 cm.), straight shaft attached to a handle at an obtuse angle, after the fashion of the nasal instruments.

This method has grown beyond the stage of a mere experiment; it is a fact. According to the inventor it is of equal importance for the specialist as laryngoscopy. It may be readily admitted that it is not an easy art; that it should be studied and practiced just as well as laryngoscopy and rhinoscopy. But the results are surprising to the observer who has been in the habit of examining the larynx exclusively with mirrors. It is true that there may be as yet a few shortcomings to this method; for instance, it is difficult to get a good view of the anterior commissure with the autoscope, at least in a number of patients; yet, as the inventor truly remarks, this is sometimes also the case with the ordinary laryngoscopic examination. However, the inventor himself, and those who have practised autoscopy and have some experience with it, do not insist upon saying that it will supplant laryngoscopy, or that it may be used in all cases. This would be exaggeration. But at this time it may be stated that it will prove a valuable adjunct to laryngoscopy to the physician, who knows when to use the one and when to apply the other. I may state from a somewhat extended personal experience with this method, that it is, in skilled hands, by no means painful to those patients, in whom it can at all be exhibited; and their number is by no means so small as it might appear to those who first attempt to use the autoscope. And you may notice that this patient whom I used for this demonstration, does not show the least uneasiness. It requires only some patient practice with this instrument, in order to become familiar with the proper manipulations, which must be firm and decided, and yet gentle, and to a certain extent, yielding. If thus executed, autoscopy will in most cases be considered only moderately disagreeable by the patient. And in spite of its disadvantages it certainly has some great advantages. The actual tissues appear in autoscopy before the eye of the physician, and not their image, and the anatomic details appear with a clearness that must be seen to be appreciated. Above all, the posterior wall of the larynx, the interarytenoid fold, which can be examined only with great difficulty by the aid of the mirror, can be inspected almost in a surface view; and the possibility of inspecting the whole of the trachea, and the beginning of the bronchi would alone be sufficient to insure for autoscopy recognition among our most valuable diagnostic and therapeutic resources.

PULMONARY TUBERCULOSIS—ITS DIMINISHING PREVALENCE.

BY EDWARD F. WELLS, M.D.,
CHICAGO.

In a paper presented, several months ago, to the Chicago Medical Society, I enunciated the proposition that pulmonary tuberculosis is declining in prevalence, and supported the assertion by some condensed statistical tables. The conclusions arrived at, although neither novel nor surprising, have met with no hearty acceptance. On the contrary, I have been informed that my deductions were extracted from an array of facts much too circumscribed; that a careful survey of a wider field would show other and differing premises; that my conclusions were misleading; that the prevalence of pulmonary tuberculosis has, in fact, undergone no decline. Recently I have tabulated statistics from a broader field, as suggested, with the result of confirming the opinion previously expressed.

Readily accessible medical literature gives us very little information upon this subject.

Weitemeyer[1] informs us that in Munich during the 75 years from 1814 to 1888, there were 329,862 deaths from all causes, and 47,282 from pulmonary tuberculosis, equal to 14.33 per cent. In periods of 25 years the proportion was as follows:

First 25 years	15.34 per cent.
Second 25 years	14.93 "
Third 25 years	13.71 "

The decline is equivalent to 10 per cent.

In the same city the death rate from pulmonary tuberculosis, per 1,000 of population, was, in 1883, 4.08, and in 1893, 3.08, a decline of 24.5 per cent.[2]

Hollinger[3] gives the following additional statistics:

Berlin, 1883	3.47	per 1,000 of population.
" 1893	2.57	" "

A decline of 54.8 per cent.

Vienna, 1883	6.92	per 1,000 of population.
" 1893	4.70	" "

A decline of 31.7 per cent.

Simpson[4] states that in the 11 years, 1873 to 1883, pulmonary tuberculosis declined in prevalence in the North of Scotland.

Borden[5] gives an example of extraordinary susceptibility and increasing fatality in the case of the Apache Indians, as follows:

Average annual population	388
Deaths from pulmonary tuberculosis	15.6
Rate per 1,000 of population	40

Being averse to burdening medical literature with any unnecessary matter, especially of a statistical nature, I addressed a letter to each of twelve of the foremost physicians of this country requesting an answer to the following question:

"Is pulmonary tuberculosis increasing or decreasing in prevalence, and, if either, to what do you attribute the change?"

Of those who kindly replied to the interrogatory not one gave an answer satisfactory to himself. Each stated that the opinion which he expressed was based upon personal impressions and experience and not upon statistical evidence. In the majority of instances the fact is mentioned that the writers were unable to refer to any statistics upon this subject. It would seem, therefore, that the material presented in the accompanying tables will not be found useless or superfluous.

As already stated, the tables show a marked, widespread and steady decline in the prevalence of the malady under consideration. This is so clearly and graphically shown as to render any extended comment in the text unnecessary.

TABLE I.—MORTALITY OF PULMONARY TUBERCULOSIS PER 1,000 OF POPULATION.

New York.

Year.	Population.	Deaths from Pulmonary Tubercle.	Per 1000 of Pop.	Year.	Population.	Deaths from Pulmonary Tubercle.	Per 1000 of Pop.	Year.	Population.	Deaths from Pulmonary Tubercle.	Per 1000 of Pop.
1805	76000	462	6.08	1835	270000	1497	5.54	1865	724000	3394	4.65
1806	79600	354	4.57	1836	278000	1514	5.44	1866	768000	3481	4.53
1807	83500	464	4.56	1837	287000	1458	5.08	1867	808000	3256	4.03
1808	87500	427	4.90	1838	295000	1225	4.15	1868	851000	3414	4.01
1809	91600	413	4.51	1839	304000	1318	4.33	1869	896000	3364	3.75
1810	96000	569	5.93	1840	313000	1296	4.12	1870	943000	4030	4.27
1811	96000	595	6.20	1841	324000	1270	4.53	1871	956000	4186	4.37
1812	96000	669	6.97	1842	335000	1339	3.99	1872	967000	4274	4.41
1813	96000	562	5.93	1843	347000	1503	4.33	1873	982000	4134	4.20
1814	96000	572	5.96	1844	357000	1428	3.97	1874	1031000	4034	3.91
1815	100000	613	6.18	1845	371000	1657	4.47	1875	1044000	4172	3.99
1816	104000	678	6.52	1846	397000	1698	4.29	1876	1075000	4174	3.90
1817	108700	574	5.30	1847	424000	1926	4.54	1877	1108000	4044	3.65
1818	113000	591	5.21	1848	453000	1869	4.12	1878	1141000	4468	3.91
1819	118000	577	4.90	1849	484000	2086	4.31	1879	1175000	4343	3.69
1820	123000	626	5.09	1850	517000	1922	3.71	1880	1209000	4706	3.89
1821	131000	715	5.46	1851	538000	2374	4.41	1881	1244000	5312	4.27
1822	139000	624	4.50	1852	561000	2487	4.43	1882	1281000	5247	4.10
1823	147000	683	4.63	1853	584000	2739	4.69	1883	1318000	5270	4.01
1824	156000	736	4.70	1854	608000	3032	4.98	1884	1357000	5235	3.87
1825	166000	843	5.08	1855	633000	2635	4.16	1885	1396000	5196	3.79
1826	173000	820	4.73	1856	665000	2478	3.72	1886	1437000	5477	3.81
1827	180000	829	4.60	1857	699000	2814	4.02	1887	1479000	5260	3.55
1828	188000	906	4.82	1858	735000	3046	4.14	1888	1522000	5260	3.45
1829	195000	880	4.51	1859	775000	3237	4.17	1889	1566000	5179	3.30
1830	203000	974	4.78	1860	812000	3186	3.92	1890	1612000	5292	3.41
1831	215000	1033	4.80	1861	793000	3025	3.80	1891	1659000	5160	3.11
1832	229000	1415	6.20	1862	778000	3170	4.07	1892	1707000	5033	2.95
1833	241000	1251	5.19	1863	762000	3685	4.83	1893	1757000	5124	2.91
1834	255000	1471	5.76	1864	745000	3615	4.85	1894	1808000	4658	2.57

	England and Wales.			Massachusetts.			Chicago.		
Years.	Population.	Deaths from Pulm. Tuber.	Per 1000 of Pop.	Population.	Deaths from Pulm. Tuber.	Per 1000 of Pop.	Population.	Deaths from Pulm. Tuber.	Per 1000 of Pop.
1848	17300000	51663	2.98	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1849	17500000	52379	2.97	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1850	17800000	46615	2.62	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1851	18200000	49116	2.60	- - - - - -	- - -	- - -	34000	42	1.24
1852	18200000	50594	2.78	- - - - - -	- - -	- - -	34000	116	2.99
1853	18400000	50713	2.73	1075000	4373	4.07	57000	174	2.98
1854	18600000	51256	2.75	1103000	4611	4.18	66000	216	3.28
1855	18800000	52270	2.95	1132000	4750	4.19	80000	169	2.07
1856	19000000	48950	2.57	1151000	4310	4.18	84000	268	3.42
1857	19200000	50166	2.54	1171000	4625	3.95	93000	255	2.74
1858	19500000	50442	2.58	1190000	4574	3.84	84000	334	3.96
1859	19700000	50149	2.54	1211000	4704	3.88	94000	256	2.72
1860	19900000	51024	2.56	1231000	4557	3.70	109000	274	2.52
1861	21100000	51931	2.58	1234000	4522	3.65	120000	326	2.67
1862	20300000	50962	2.51	1245000	4264	3.48	137000	343	2.50
1863	20500000	51072	2.50	1255000	4467	3.72	150000	583	3.89
1864	20700000	53044	2.54	1260000	4733	3.74	160000	470	2.94
1865	21000000	53734	2.55	1267000	4661	3.68	178000	346	1.90
1866	21210000	55714	2.62	1303000	4600	3.53	200000	406	2.02
1867	21400000	55042	2.57	1340000	4362	3.25	225000	404	1.80
1868	21600000	51423	2.38	1378000	4437	3.22	252000	422	1.67
1869	21900000	52270	2.39	1417000	4657	3.28	280000	503	1.80
1870	22400000	54231	2.42	1457000	5003	3.43	299000	571	1.91
1871	22800000	53356	2.35	1493000	5070	3.39	334000	500	1.50
1872	23100000	52589	2.28	1532000	5556	3.63	367000	710	1.93
1873	23400000	51355	2.46	1571000	5556	3.54	380000	639	1.68
1874	23600000	49337	2.09	1611000	5284	3.28	395000	630	1.59
1875	23900000	52963	2.12	1652000	5738	3.47	407000	693	1.70
1876	24200000	51775	2.14	1678000	5927	3.17	422000	732	1.73
1877	24500000	51353	1.87	1704000	5457	3.20	440000	733	1.67
1878	24900000	52956	1.82	1731000	5334	3.08	480000	677	1.55
1879	25300000	51734	1.86	1752000	5823	2.97	475000	745	1.57
1880	25700000	48201	1.82	1783000	5494	3.08	503000	853	1.69
1881	26100000	47591	1.82	1818000	5866	3.24	540000	1037	1.92
1882	26400000	48315	1.86	1846000	5865	3.17	560000	1062	1.96
1883	26800000	50053	1.87	1873000	5931	3.15	580000	1016	1.75
1884	27100000	49327	1.82	1910000	5795	3.03	630000	1034	1.64
1885	27500000	48175	1.75	1940000	5755	3.06	665000	1162	1.75
1886	27800000	47822	1.72	2000000	5897	2.94	704000	1199	1.70
1887	28200000	44935	1.59	2060000	5871	2.85	760000	1352	1.78
1888	28600000	44249	1.54	2120000	5728	2.70	830000	1426	1.72
1889	- - - - -	- - -	- - -	2180000	5581	2.56	935000	1489	1.59
1890	- - - - -	- - -	- - -	2240000	5791	2.31	1200000	1972	1.64
1891	- - - - -	- - -	- - -	2300000	5484	2.38	1250000	2120	1.70
1892	- - - - -	- - -	- - -	2360000	5739	2.43	1438000	2177	1.51
1893	- - - - -	- - -	- - -	2420000	5527	2.23	1600000	2315	1.45
1894	- - - - -	- - -	- - -	- - - - - -	- - -	- - -	1568000	2155	1.37

	Philadelphia.			Saint Louis.			Cincinnati.		
1861	576000	1817	3.15	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1862	557000	1949	3.32	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1863	598000	1955	3.27	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1864	608000	2087	3.43	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1865	619000	2014	3.27	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1866	630000	1944	3.09	- - - - - -	- - -	- - -	- - - - - -	- - -	- - -
1867	641000	1947	3.03	220000	464	2.11	210000	450	2.14
1868	652000	1946	3.06	230000	503	2.43	212000	443	2.09
1869	662000	1975	2.98	240000	571	2.38	214000	447	2.09
1870	674000	2308	3.42	250000	620	2.48	216000	582	2.70
1871	700000	2237	3.19	260000	599	2.30	220000	580	2.63
1872	725000	2330	3.21	270000	568	2.40	224000	614	2.75
1873	750000	2292	3.05	280000	751	2.68	228000	657	2.88
1874	775000	2304	2.97	290000	581	2.00	232000	635	2.73
1875	800000	2357	2.95	300000	740	2.56	236000	674	2.85
1876	825000	2676	3.24	310000	721	2.32	240000	723	3.01
1877	800000	2349	2.68	320000	686	2.14	244000	720	2.96
1878	820000	2491	3.04	330000	730	2.21	248000	659	2.66
1879	830000	2481	2.99	340000	781	2.30	251000	698	2.78
1880	845000	2492	3.06	350000	786	2.24	255000	720	2.82
1881	850000	2768	3.25	370000	913	2.46	258000	904	3.50
1882	870000	2809	3.20	400000	870	2.13	264000	783	2.97
1883	890000	2798	3.14	400000	944	2.36	268000	862	3.21
1884	910000	2801	3.09	400000	845	2.11	272000	804	2.95
1885	930000	2821	3.03	400000	888	2.22	280000	855	3.05
1886	950000	2834	2.98	400000	915	2.29	284000	850	3.00
1887	970000	2800	2.88	420000	829	1.97	289000	817	2.83
1888	990000	2695	2.72	440000	800	1.81	294000	746	2.54
1889	1015000	2532	2.49	450000	655	1.45	295000	731	2.48

1890	1042000	2764	2.80	460000	843	1.83	297000	756	2.54
1891	1070000	2636	2.46	460000	860	1.87	299000	643	2.15
1892	1090000	2709	2.49	500000	882	1.76	303000	647	2.13
1893	1110000	2671	2.40	520000	984	1.89	307000	744	2.42
1894	1135000	2513	2.21	540000	875	1.62	311000	720	2.31
	Providence.			Milwaukee.			Brooklyn.		
1870	69000	238	3.45	71000	93	1.31	------	---	---
1871	72000	194	2.70	75000	143	1.91	------	---	---
1872	76000	241	3.17	80000	105	1.31	------	---	---
1873	80000	231	2.90	85000	115	1.37	435000	1376	3.16
1874	83000	270	3.25	90000	136	1.62	450000	1267	2.86
1875	87000	299	3.49	94000	117	1.24	468000	1522	3.25
1876	90000	284	3.15	98000	127	1.30	486000	1539	3.17
1877	93000	294	3.14	102000	189	1.85	505000	1587	3.14
1878	97000	305	3.14	107000	175	1.63	525000	1509	2.87
1879	103000	293	2.84	111000	170	1.53	546000	1665	3.05
1880	105000	322	3.07	116000	138	1.20	567000	1736	3.06
1881	107000	344	3.21	123000	203	1.65	589000	1754	2.99
1882	109000	351	3.19	131000	207	1.58	612000	1806	2.95
1883	111000	364	3.28	139000	199	1.43	636000	1847	2.89
1884	114000	344	3.01	147000	220	1.50	661000	1913	2.89
1885	117000	347	2.96	155000	238	1.53	687000	1966	2.86
1886	120000	368	3.06	163000	246	1.49	733000	2026	2.76
1887	123000	314	2.56	171000	281	1.64	761000	2085	2.74
1888	126000	359	2.77	180000	289	1.60	791000	2051	2.58
1889	129000	309	2.40	192000	284	1.48	822000	2055	2.50
1890	132000	386	3.03	204000	294	1.43	855000	2169	2.53
1891	135000	344	2.55	215000	318	1.48	890000	2012	2.26
1892	138000	333	2.41	225000	314	1.39	930000	2128	2.28
1893	141000	325	2.30	240000	262	1.09	965000	1999	2.07
1894	144000	331	2.30	255000	354	1.39	1045000	2260	2.16
	Baltimore.			Washington.			Ontario.		
1875	287000	1118	3.90	157000	529	3.64	------	---	---
1876	296000	1115	3.70	162000	603	3.63	1905000	2259	1.13
1877	305000	1100	3.93	167000	689	3.62	1908000	2157	1.13
1878	314000	1127	3.59	172000	716	3.18	1911000	1999	1.04
1879	323000	1162	3.60	178000	746	4.21	1914000	2065	1.09
1880	332000	1221	3.67	183000	759	4.15	1917000	2154	1.12
1881	340000	1206	3.54	189000	804	4.27	1920000	2397	1.24
1882	350000	1217	3.47	195000	730	3.78	1923000	2464	1.28
1883	360000	1272	3.53	201000	819	4.09	1956000	2500	1.27
1884	370000	1126	3.04	207000	788	3.80	1988000	2347	1.13
1885	380000	1270	3.34	213000	796	3.80	2026000	2313	1.14
1886	390000	1182	3.03	217000	736	3.40	2052000	2417	1.15
1887	400000	1077	2.74	222000	702	3.16	2085000	2556	1.22
1888	411000	1151	2.80	226000	677	3.09	2117000	2521	1.19
1889	422000	1147	2.71	230000	754	3.29	2149000	2417	1.12
1890	434000	1249	2.93	238000	749	3.15			
1891	445000	1073	2.41	246000	714	2.90			
1892	456000	1127	2.47	254000	681	2.69			
1893	467000	1099	2.35	262000	675	2.58	2270000	2364	1.22
1894	478000	1106	2.31	271000	671	2.48			

Table II.—Mortality of Pulmonary Tuberculosis—Per 1000 of Population—By Decades. Averages. Decline

Place.	1805 to 1814	1815 to 1824	1825 to 1834	1835 to 1844	1845 to 1854	1855 to 1864	1865 to 1874	1875 to 1884	1885 to 1894	Num of years.	No.	Decline %
New York.	5.72	5.25	5.05	4.57	4.39	4.15	4.22	3.93	3.29	90	4.80	42.3
Baltimore.	---	4.10	4.00	---	---	---	---	3.54	2.71	40	3.60	33.9
Philadelphia.	---	---	---	3.52	---	3.29	3.12	3.06	2.65	50	3.13	24.7
Providence.	---	---	---	4.33	3.98	3.08	3.22	3.15	2.63	60	3.40	40.0
England & Wales.	---	---	---	---	2.72	2.59	2.41	1.90	1.65	41	2.32	35.6
St Louis.	---	---	---	---	3.60	---	2.71	2.67	1.87	32	2.15	28.0
Massachusetts.	---	---	---	---	---	3.37	3.47	3.28	2.65	41	3.33	41.0
Chicago	---	---	---	---	2.62	2.80	1.75	1.71	1.58	44	2.01	39.0
New Orleans.	---	---	---	---	4.90	---	3.78	4.06	3.43	14	3.72	30.0
Cincinnati	---	---	---	---	---	---	2.42	2.72	2.75	28	2.73	.4
Milwaukee.	---	---	---	---	---	---	1.50	1.50	1.43	25	1.48	9.0
Brooklyn.	---	---	---	---	---	---	3.01	3.23	2.42	22	2.77	35.0
Washington	---	---	---	---	---	---	---	3.84	3.05	20	3.58	24.0
Columbus.	---	---	---	---	---	---	---	1.10	1.20	15	1.17	2.0
Cleveland.	---	---	---	---	---	---	---	---	1.40	10	1.40	12.0
Detroit	---	---	---	---	---	---	---	---	1.71	7	1.71	14.0
Buffalo	---	---	---	---	---	---	2.90	2.46	2.07	---	17	2.50	44.0
						1851 to 1860	1861 to 1870	1871 to 1880	1881 to 1890			
United States.	---	---	---	---	---	1.45	1.56	1.79	1.52	163	50	1.65	12.0

TABLE III.—MORTALITY OF PULMONARY TUBERCULOSIS PER 1,000 OF POPULATION IN THE UNITED STATES.[6]

Decennial Census.

Years.	Population.	Deaths from Pulmon. Tuber.	Per 1,000 of Pop.	Remarks.
1850	23,191,000	33,516	1.45	Average for five decennial years, 1.65. Increase of 12 per cent.
1860	31,443,000	49,082	1.56	
1870	38,558,000	68,896	1.79	
1880	50,156,000	91,551	1.82	
1890	62,622,000	102,199	1.63	

Although in the case of Ontario, Savannah and the United States there is shown to be an increase in the prevalence of pulmonary tuberculosis, I believe that an intelligent and comprehensive review of the statistics presented in the tables will confirm the opinion which I have expressed, viz., that the malady has decreased in prevalence during the recent past, and that the tendency is toward a further reduction.

34 Washington Street.

TWO CASES OF EXTENSIVE EXCISION OF THE ELBOW JOINT, WITH REMARKS.

Read by title in the Section on Surgery and Anatomy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY GEORGE FKANKLIN SHIELS, M.D., C.M., F.R.C.S.E., L.R.C.P.

SAN FRANCISCO, CAL.

In the following report of cases and observations thereon, no description of the various operations for excision of the elbow joint will be introduced, since the writer is of the opinion that the time of the Surgical Section is too valuable to be used in placing before its members a résumé of that which may be found in any work on general or operative surgery. It will be sufficient to say that in both cases the single posterior median incision was used, and that the customary care was taken in clearing the bones and sawing them through.

Case 1.—Miss F., aged 24, of Jacksonville, Ill., was April 27, 1892, thrown from a buggy, sustaining a severe comminuted fracture of the condyles of the right humerus, which extended to the elbow joint, as well as a fracture of the olecranon process of the ulna. The doctor who first saw the case put up the arm in a straight position, using a posterior splint which was replaced in two weeks by a plaster cast, this being removed during the third week, when the patient was told to exercise the arm. This she was unable to do, as she could neither flex the arm nor pronate or supinate the forearm. After visiting several surgeons, who informed her that nothing could be done, she started for the Sandwich Islands as a school teacher, and

[1] N. Y. Med. Jour., Nov. 5, 1892, p. 526.

[2] Hollinger, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 2, 1895.

[3] Ibid.

[4] Lancet, Sept. 29, 1883.

[5] Boston Med. and Surg. Jour., July 6, 1893, p. 8.

[6] The writer desires to return thanks to the registrars of the various cities referred to for valuable and special statistical information, and to the gentlemen who so courteously sent replies to his letter of inquiry.

en route called upon me while in San Francisco in October, 1892.

When I saw her the condition was as follows: The general health of the patient was bad and she might be described as being generally "run down." The elbow was ankylosed so that the forearm was at an angle of 135° to the arm. She could neither supinate nor pronate the forearm, which occupied a position slightly nearer supination than pronation. All the muscles acting on the elbow joint were atrophied, and the arm was from its position practically useless. The elbow joint was obliterated by a callous mass which gave it a swollen appearance, and this was painful on pressure and on attempts at forcible motion.

On consultation with Dr. J. F. Morse, surgeon to the German Hospital in San Francisco, it was decided that nothing short of excision of the destroyed joint could be of any benefit. The patient agreed and the operation was performed. As soon as the incision was made and efforts at clearing the bones were begun, we found that inflammation of the lower end of the humerus had occurred and that the bone was so disorganized that it would be necessary to remove an unusually extensive portion to escape diseased tissue, so with great misgiving we sawed the humerus through an inch above the margin of the olecranon process. The arm was put up at right angles. At the end of the first week passive motion was instituted, and in the course of the second week the forearm had been gradually carried through various angles until it was brought from full flexion to full extension. This passive motion was continued throughout the whole course of the treatment. On the third week the wound was healed with the exception of a small sinus which led down to the lower end of the humerus, and as this would not heal it was laid open, when we were enabled to remove a ring of bone which had necrosed and which was about one quarter of an inch ih length. The wound now readily healed, and the patient commenced voluntaay efforts at flexion and extension, but the limb was like a flail and would fall from one side to the other in a helpless manner. In order to correct this I had made a steel joint to take the place of the internal and external bony and ligamentous lateral supports, and to my gratification the patient rapidly improved her power of motion and moreover developed an extensive pronation and supination, which she aided by rotation of the humerus.

When I last heard of her she was able to play the piano, dress and feed herself, "do up her back hair," and when dressed could readily conceal her injury except to the practiced eye, which would of course notice the shortening.[1]

Case 2.—R. O., aged 26, was struck by a piece of iron on the tip of the left elbow on March 1891. The joint was swollen and painful and the arm fixed in the extended position remaining so for a year, when efforts were made to forcibly flex the joint. This led to increased pain and stiffness and subsequently an abscess formed just above the olecranon process, which opened itself and continued to discharge up to the time when I first saw him in March 1893. On examination a sinus was found to lead down to a caries of the olecranon and also of the articular surface of the humerus. The joint was swollen and all the bones going to form it were thickened. The arm was fully extended and there was no power of flexion, extension, pronation or supination. The muscles of the arm and forearm were much atrophied.

Excision of the joint was advised and agreed upon. The operation showed the joint to be tuberculous and it was necessary to remove half an inch of the shaft of the ulna as well as an unusually large portion of the humerus, the section being made about half an inch above the margin of the olecreanon fossa. Only the upper portion of the excision wound was stitched and the cavity (after extensive curetting and free use of the scissors to remove suspicious tissue) was stuffed with iodoform gauze.

The after-treatment was much the same as in case 1, except that no steel joint was found necessary. At first there was a tendency to a flail joint but the parts contracted and the muscles adapted themselves to the new conditions.

The eventual result will be best understood by using the patient's words when I saw him yesterday to remove a small piece of bare bone two years after the original operation.

[1] Jan. 17, 1896. Since the above report I have received a letter from the Sandwich Islands in which Miss F. informs me that her arm has grown stronger steadily, and that she can now "put up an eight pound dumb bell above her head."

I asked him what he had been doing; he said that he had been washing dishes, picking fruit, waiting on table and wood-chopping, all of which occupations require that the elbow joint should have extensive motion. I then requested him to go through the motions of extension, flexion, supination and pronation with his coat on in the presence of two doctors who, when asked what was the matter with him (not knowing of the operation) said that his arm was congenitally shortened.

In commenting on these two cases let it be said that there is nothing unusual except the extensive removal of bone and it is to this that I desire to call particular attention, in fact it is the sole reason for the present report. In case 1, both my consultant and myself on discovering the extensive destruction of the humerus felt hopeless as to the future possibility of obtaining a movable joint, and it is indeed strange that the muscles could so adapt themselves to the new conditions that an almost normal range of motion resulted, even with the aid of a mechanical steel hinge. I desire to call attention to the fact that the collar which surrounds the forearm need only be tight enough to keep the apparatus in position and does not interfere with supination and pronation of the forearm. In case 2 it seemed almost foolish to attempt anything but amputation, but with the memory of case 1, as a guide, the operation was not only done but proved most successful and instead of an armless cripple we have a man who when dressed and ordered to go through a wide range of motion makes it difficult for even a medical man to diagnose his condition.

I trust that these two cases may in some slight measure demonstrate the fact that even extensive removal of the elbow joint may be followed by good results, and that one should hesitate in cases of extensive destruction before he is satisfied with either a stiff joint or decides to amputate the limb, since he can always carry out either plan should efforts for a movable joint fail.

32 O'Farrell Street, San Francisco, Cal.

BACTERIOLOGY.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY S. A. HOPKINS, M.D.

BOSTON.

I am sorry to be obliged to preface my remarks with an apology, but when I accepted the honor of addressing this society, I had in mind certain original work upon which I was then engaged and which I hoped to have completed in time to lay before you in this paper. I regret to say that in this I am disappointed. As you well know, the demands of science are hard to fulfill. She has little respect for the limitations of time and strength of her votaries. While, therefore, I shall be able to offer you but little in the way of original work, I am very glad to have this opportunity of speaking to you on a subject that is of the deepest interest and significance to me, and which I trust may in its future development prove to be of the greatest practical value to us all.

We have as specialists in medicine in the department of oral surgery made such remarkable advances in recent years in the practical operations for the relief of pain and to restore the teeth to the highest

degree of usefulness that we are puzzled to know how to go further. The degree of skill that a dentist may exercise in his calling can not be easily overestimated. It is not going too far to say that in the performance of the most difficult surgical operations no more delicate touch, no higher degree of skill can be exercised than is called forth in your daily practice. A high plane has certainly been reached in the direction of practical operations, but I feel sure that there is another direction in which our mental activity has not yet had full scope, and I am convinced that in the study of pathology and especially in the study of bacteriology there is a rich field to be cultivated and a splendid harvest of scientific truths to be garnered. By a brief outline of the general subject of bacteriology and by a hasty reference to the specific work which bacteria perform in both health and disease, I shall endeavor to point out to you the importance of this science in general medicine, and I shall briefly call your attention to its possibilities as applied to oral diseases and the destructive processes that go on in the human teeth.

It is a subject for comment that when in the latter part of the 17th century Lieuwenhoek made his wonderful improvements in microscopes and thus prepared the way for and made the study of bacteriology possible, some of his first researches, his first discoveries, were made in connection with the microörganisms of the human mouth. The study of bacteriology may be said to have begun with the improvements in microscopes that I have just mentioned. It was Koch's discovery of the solid culture media that placed the work on a scientific basis and made possible investigations that up to that time could not have been made. It was Pasteur's application of the new science in the treatment of anthrax and other diseases that made bacteriology practical as applied to the treatment of diseases and opened to the world a new method of treatment which bids fair to outshine in its usefulness and scientific accuracy all previous knowledge of curative medicine. The limitations of this paper will not admit of even the mention of the names of many other eminent scientists who did important pioneer work in this field, but no mention of this science, however, brief, can be made without reference to Lister's work, with which we are all familiar. The thousands of lives saved by antiseptic surgery will be an everlasting monument to his name. Much of the pioneer work in the study of mouth bacteria has been done by Möller of Berlin, who has made important discoveries and written an excellent work on the subject that will repay careful study. In our own country, the Surgeon General of the U. S. Army, George M. Sternberg, has written the most comprehensive and exhaustive manual of bacteriology that has yet been published. When we consider the immense amount of original work which this volume contains, and consider how large a part of it was done while hampered by the limitations of an army life, we can not but wonder at the courage and persistence of the man, while we accept the reflected honor of naming him as our countryman. I wish to give credit to G. Sims Woodhead of Edinburgh, to Prof. Sedgwick of the Massachussets Institute of Technology, and to Prof. Ernst of the Harvard Medical School, for many suggestions offered in this paper.

Bacteria were originally supposed to belong to the animal kingdom, but it is now known that they are vegetable microörganisms. It is important to get this firmly fixed in one's mind, for while it is known that microörganisms belonging to the animal kingdom exist, and play an important part in the economy of life, yet it is an erroneous and most unfortunate misapprehension of facts which places bacteria in the same class. I am convinced that a great deal of the repulsive feeling which is aroused in every layman's mind by the mention of bacteria is largely due to this misconception. I am sorry to say that this error is not wholly confined to laymen, for it has been my misfortune to frequently see trained physicians express surprise when it was asserted that bacteria were vegetable microörganisms. I do not think the importance of bacteriology has yet been understood or appreciated by the public, who have been slow in giving their support to this science, and popular support we must have if we are to give mankind the benefit of our labors in any field; hence any misconception of facts which is likely to prejudice the mind of the public against a science is to be regretted. The bug theory, therefore, should be laid aside, and this important factor in our lives relegated once and for all to the domains of botany where it belongs. (Charts showing some of the common forms of bacteria, cocci, bacilli, spirilla, parasites, saprophytes, aerobic, anaerobic, motile, non-motile).

It is a curiously fixed belief in the popular mind that bacteria necessarily means disease. Of course we know nothing could be more unfortunate than this belief, for it serves only to create a panic in the minds of people less familiar with the subject which can not be easily quelled. It is true that many of our most fatal epidemics have been traced to these infinitesimal organisms. They and they alone have been proved to be the essential factor in the production of many diseases. Undoubtedly there will be many more convicted of guilt, but we should not lose sight of the fact that the great army of bacteria, so far as we know, are harmless, while many forms render most beneficent and important services to mankind.

The world of bacteria seems to my mind to bear a close analogy to the higher vegetable world with which we are more familiar. We have among bacteria almost as great variety of shapes and forms as among the higher orders of plants, and the shapes and sizes vary in different soils or culture media. Certain forms grow best in some particular soil or culture medium and will die if not cultivated in a suitable medium, just as the higher plants develop best in soil and under conditions best suited to their growth. Some forms, like our common weeds, seem to have no special object in nature, or at least their usefulness has not yet been ascertained, and certain varieties of plants will be crowded out and die if others are allowed to grow in their vicinity. Certain bacteria produce spores almost analogous to seeds, which retain their vitality long after the death of the plant, and spring up to life again when planted in suitable soil under suitable conditions. Some bacteria, like the noxious weeds and poisonous plants, create havoc in the human race, but the wisdom of creative intelligence has not failed in the creation of bacteria any more than in the higher vegetable world, and has made life itself dependent upon their intervention. These infinitesimal organisms are as necessary to existence as are the higher plants, and the latter would cease to flourish were it not for the

presence of bacteria. Without the aid of these microscopic bodies some of the most essential and at the same time the most familiar and common-place processes of nature could not be carried on. Our farming operations are dependent upon them, and the farmer, without being versed in the higher sciences is putting forth in the cultivation of his crops his best efforts to encourage the action of the bacteria in the soil, without which he could not raise a crop. These infinitesimal allies of the farmer convert the excrement of animals and plants into simple constituents necessary for the development of plant life. (Prof. Sedgwick's plate).

Beginning with the nitrates, plant life is evolved with the aid of the sun's rays, until it is converted into living vegetable matter, which in turn may be converted into animal. From this position at the top of the chemic scale we find it first decomposing into nitrogen and organic nitrogen, that is, albuminoid ammonia. The next step is nitrogen as free ammonia. The next step is its conversion into nitrites, and the last step is from nitrites to nitrates, where it began its existence as plant life. These changes are brought about by the action of the nitrifying bacteria. The expression sterile land is strictly scientific, for no sterilized land, land that is free from bacteria, can afford support to the human race. It would be interesting, if time permitted, to show in detail the work of these bacteria. We find that in cultivated lands they predominate in great numbers, in fact the object of cultivation is to break up the land in such a way that the conditions that are best suited to the development of a great many bacteria shall be fulfilled. In land that has not been disturbed for a long time we find very few bacteria at a greater depth than one meter below the surface, but in cultivated land we find them in abundance at a much greater depth. The effectiveness of bacteria lies largely in the fact of their being reproduced in such enormous numbers in an almost infinitesimal space of time. It is estimated that a gram of earth in the superficial layers may contain anywhere from 5,000,000 to 50,000,000. In the dirty and crowded thoroughfares of Naples the number of bacteria to one gram of dust is not less than one billion. If any argument were needed to illustrate the dangers of mouth breathing, it might be found in the statement I have just made. Fraenkel and Wynogradski have both described a form which has this nitrifying power of which I have spoken, but it is probable that this process does not depend upon any one form, but is brought about by the labors of many different varieties; but these forms, like many of the mouth bacteria, do not grow readily on the usual culture media, and their study is attended with great difficulty.

In connection with the bacteria which are found in the soil, it would not be out of place to say a few words in regard to the work which they perform in connection with sand filtration. Purification of the water in the pockets of the earth is brought about by sand filtration. It has been known for many years that under certain conditions sand forms a perfect filter, but it is only within recent years that we have known the method of this operation. This has been taught us by the study of the bacteria of the soil. We have seen how the organic matter which finds its way on the field in various forms of decomposed vegetable and animal matter is taken up and converted into plant life, and we find that much the same process goes on in sand filtration. If you constructed a filter of clean sterilized sand and then poured contaminated water or sewage into it, you might find that the water as it came through was quite clear to look upon, but on a chemic and bacteriologic examination being made, you would find it teeming with organic matter, and possibly pathogenic bacteria, and entirely unfit for use. But if you continued to pour the filthy water through and examined it as before, you would notice that as the filter grew older the water became purer, and after a certain time, provided there had been free access of air, and you had not poured the filthy water through so fast as to mechanically clog the filter, you would find that perfectly clear water percolated through, and upon subjecting it to chemic and microscopic tests you would find that it was pure. You would also find that it would continue to be pure as long as the filter was not overcrowded and had a plentiful supply of oxygen. Now what has happened? Microörganisms capable of destroying organic matter have attached themselves to the particles of sand in the filter and are performing the same office here as in the soil, and they will continue to do so as long as the filter is properly used. Thus we have science of bacteriology simplifying the question of the water supply of the world.

Many of our large cities are already approaching the end of their possibilities as regards the natural supply of pure water, and in the great majority of our large cities and towns it is a serious question as to when the water supply will be exhausted. The time is apparently not far off when we shall be able to construct filter beds and establish bacteriologic laboratories in connection with the water works of every large city and town, and when the fact is firmly established that filter beds actually filter, and the public mind has been set at rest on this subject, we shall be able to take our water from the nearest river, and be surer of having it purer than that for which we now pay millions of dollars to procure from some distant mountain rill or crystal lake. This work has been going on with great success in the city of London for years. London at the present time employs over a hundred and twenty acres as filter fields, and the difference in typhoid fever rates between London and outlying districts which are not supplied with London water is very marked indeed.

There is an interesting case of a town, Altona, which might be called a suburb of Hamburg, lying as it does some few miles out of the city, and which takes its water from the Elbe at almost the same spot from which Hamburg is supplied. During the cholera epidemic at Hamburg a few years ago there were no cases of cholera in this town until an accident happened to one of the filter fields. From this cause a few cases of cholora were developed, but as long as the people had used water filtered in this way, although they were drinking precisely the same water as the city of Hamburg, no harm came to them. The city of Lawrence, Mass., has recently subjected its water to sand filtration with remarkable results in the reduction of typhoid and similar diseases, and many other towns are following the example of Lawrence. Of course the remarkable rapidity with which bacteria act is dependent upon their vast numbers and the rapidity with which they multiply. The number of cocci in one millegram of a pure culture has been estimated at eight billion. If further evidence were needed to show the important part these infinitesimal organ-

isms play in our daily life, the familiar ferments of bread, cider, vinegar, wine and beer need only to be mentioned. It is probable that many of the physiologic processes that go on in the body are greatly dependent upon these microörganisms. Indeed, it has come to be a question whether life itself could be carried on without the intervention of bacteria.

I have thus briefly mentioned the work done by non-pathogenic bacteria in order to emphasize the great field the science of bacteriology has before it as applied to the arts and sciences. We as physicians, whether we are in general practice or particularly concerned in the specialty of dentistry, are more interested in the pathogenic forms. I have selected a few of the diseases with which we are more or less familiar, and which have an acknowledged bacteriologic origin, in order to point out some of the work that has already been accomplished in this direction. It must be remembered that pathogenic bacteria are for the most part parasites feeding upon living matter, and the difficulty in cultivating them is greatly increased by this fact, because it is impossible to employ living culture media. Therefore the more strictly pathogenic the form is, the more difficult it is to cultivate. Until we advance a great deal farther in the making of culture media we can not hope to isolate and study the bacteria of many diseases which are acknowledged, if analogy goes for anything, to be of bacteriologic origin. As an example of pathogenic bacteria and the spread of disease, the cholera bacillus has an especial interest.

Asiatic cholera was for ages looked upon as a devastating plague. Its origin and method of development were for many years hidden mysteries, and mankind was helpless and almost hopeless in coping with this awful destroyer. To-day, while there are sporadic cases which it is difficult to trace and hard to explain, the evidence accumulated by Koch and others leaves no question but that cholera is a parasitic disease, and that the comma bacillus is the active agent in its production. This theory of the comma bacillus is not, however, accepted by all scientists, and the investigations of such a careful worker as Pettenkofer are not to be lightly passed over. He and his followers maintain that cholera is caused by the lowering of the ground water in the pockets of the earth, and it can not be denied that the spread of the disease bears a causal relation to this phenomenon. But it is also true that meteriologic and other conditions which cause the lowering of the ground water and the increase of the drying zone are the very ones best suited to the development of the comma bacillus, and it requires no stretch of the imagination to reconcile the two theories.

Pettenkofer's theory of the ground water and drying zone serves, when rightly considered, only to support the theory of Koch, which is the only theory which will stand Koch's tests. The laws of Koch, in the tests which are to be applied to all pathogenic forms of bacteria, are three. 1. The organism must be of constant occurrence in the disease. 2. The organism must be cultivated and pure cultures obtained. 3. It must be able to produce a pathologic process exactly the same or similar to that which is produced in the normal course of the disease when inoculated into susceptible animals. In the case of the cholera bacillus the last condition or the third law was fulfilled not without difficulty, from the fact that the acid juices of the stomach had a marked effect in destroying the bacteria, but by certain processes which I have not time to describe, Koch and others were able to cause the same pathologic conditions in lower animals by inoculation of cultures of the comma bacillus that takes place in the patient suffering from Asiatic cholera.

Cholera is endemic in the delta of the Ganges river. In Persia, Asia Minor, and in China at the mouth of the Yangtse it breaks out with regularity year after year. It is brought into Europe by the ships of commerce and other vehicles of travel, and several of the worst outbreaks have been caused by the return of the Mecca pilgrims. Overcrowding and lack of hygienic measures bring about water contamination, and meteorlogic conditions favoring the development of the bacillus contribute to the spread of the disease. The specific organism is, roughly speaking, shaped like a comma. It varies in length from 1 to 2 μ and is about .5 μ in thickness; it sometimes occurs singly, sometimes in groups, and frequently has the appearance of irregular curves. Many bacteriologists consider this organism a spirillum form of which we see only broken portions. Like many other forms of bacteria the organisms present slightly different appearances when grown on different media, and there are slight differences in culture from different localities. It is said that an expert can take up certain cultures and say, this is from Shanghai, this from Egypt, this from Naples, and so on; but the microscope reveals the same characteristic comma-shaped forms in all. They grow on almost any material that is not acid. Acids destroy, and the presence of other bacteria in the culture also destroys the cholera bacillus. This fact suggests a possible means of treatment, and work is being done to ascertain the possibility of treating cholera patients by the introduction of other harmless forms. The fact that the comma bacillus is so readily destroyed by acids gives rise to the query, why are they not destroyed by the gastric juice of the stomach? Pettenkofer, Klein, Bochfontain, a New York *Herald* reporter, and doubtless thousands of others, whether intentionally or not, have swallowed the bacillus in milk, water, vegetables and other food without injury, and their immunity doubtless depends largely on the power of the healthy gastric juice to destroy this organism. It is proven beyond doubt that derangement of the stomach and intestines is one of the conditions which are favorable to the development of the disease; and that a reduction of the acid of the gastric fluid by such a disturbance may encourage the development of the organism is altogether probable.

Sailors who go ashore in an infected port, especially when they spend the night drinking and rioting, and have the usual morning derangement of the stomach in consequence, are particularly prone to the disease; and to the Mecca pilgrims, to whom I have referred as being responsible for some of the epidemics that have broken out in Europe, offer favorable conditions for its development from the wasted and unwholesome condition that is brought about by travel and fasting. These conditions lead to gastric and intestinal disturbances which are favorable to the development of the bacillus. Steerage passengers upon crowded vessels are apt to present conditions favorable to an outbreak. The gastric juice of the healthy stomach will in all probability kill these microörganisms. That fact does

not permit of our relaxing our vigor in sterilizing food and water during a cholera epidemic. We can never be quite sure that the gastric juice is in good condition, and the sterilization of everything that goes into the mouth in the nature of food and drink would crush out the most fatal epidemic immediately. Cleanliness and proper attention to hygienic measures will do much to prevent the spread of the disease, and it will be a government crime if it even obtains a foothold in this country; but it is human to be careless and to take chances, and even though we know the exact way the disease is produced and developed, it will not in all probability seriously mitigate against future outbreaks until knowledge of bacteriology becomes more general than it is to-day.

Of typhoid fever, time will not permit me to speak, except to say that the bacillus has been isolated, and while attempts to produce it on animals have not met with success, most animals being immune to the disease, and we can not very well inoculate human beings, yet the microörganism has answered all the other tests, and the evidence is undoubted that it is the cause of typhoid fever. The water supply, in this case contaminated by the dejecta of typhoid patients, is again the most common agent for the spread of the disease. Milk diluted by water from a contaminated source, or milk cans washed in contaminated water, has been the cause of more than one epidemic. Recently at a Wesleyan College in Connecticut an outbreak was traced to some oysters the students had eaten. It was found upon investigation that these had been taken from their original bed and deposited at the mouth of a fresh water stream to freshen and fatten, and investigation showed that the stream was contaminated by the feces of persons suffering from typhoid, and the source of the epidemic was proven beyond a doubt. Although contaminated water supply can not be responsible for all cases, it certainly is for the principal epidemics of typhoid fever, and most outbreaks can be traced to the pollution of the stream by the feces of patients suffering from the disease.

We pass to a brief consideration of tuberculosis. Tuberculosis is of interest not only because it is an exceedingly common and widespread disease, but because an immense amount of bacteriologic work has been done in its study and in the attempt to find a satisfactory method of treatment. I may add that it is also interesting from the fact that bacteriology was dealt a serious blow in connection with this disease by the ill-advised use of Koch's lymph, or as it is now known, tuberculin. If time permitted, I should like to detail the steps of Koch's studies and to outline the results which he hoped to attain, and did attain in a measure. I am one of the few who still believe that in tuberculin or in some modified form of tuberculin, we shall have a valuable addition to our methods of treatment in this disease. Koch's labors were incomplete when he was forced to make them public. They were not satisfactory, and the entire ground will have to be worked over again very carefully. When this is done I have no doubt that Koch will be acquitted of having committed what at this time seems a serious error. Koch's tuberculin as a means of diagnosis for diseased cattle seems to have answered all the required tests, and inestimable benefits will undoubtedly result from the destruction of tuberculous animals. We are just now going through a period of somewhat heated discussion as to the value of tuberculin as a means of diagnosis, and I prefer not to express too positive an opinion. Whether the danger from tuberculous cattle is as great as has been assumed, I am not able to state, but the fact that healthy animals are to be preferred to those suffering from tuberculosis is plainly evident, and if we can be aided by tuberculin in determining this fact, it will certainly prove a great blessing.

The bacillus of tuberculosis is a delicate rod about 2.5 μ in length and from .2 to .5 μ in width. It does not stain as readily as many others, and care must be taken in preparing the cover-glasses for the microscope. It is difficult to cultivate on artificial media; it is also difficult to obtain in pure cultures. It is, however, constantly present in all tuberculous lesions, whether they appear in the lungs, in the intestines, liver, membranes of the brain, eruptions of the skin, or any other region of the body. It does not follow that all degeneration of lung tissue is caused by tuberculosis. It is extremely probable that other forms of pathogenic and pyogenic bacteria may be found to be responsible for many destructive changes in the lung tissue. The disease, although it carries off a larger proportion of our people than any other disease, still must not be considered hopeless. We are beginning to realize more and more each year, that much can be done to prevent the spread of consumption and much to prolong the life and improve the condition of the sufferer from this disease. The importance of an early diagnosis is apparent, and this can best be accomplished by a bacteriologic examination of the sputum of suspected cases. Examinations must be made at frequent intervals, as it is not improbable that a great many negative results may be obtained before the bacillus is discovered. If once discovered, however, even if the number is very small, treatment should not be delayed. Begun in these early stages, the prognosis is by no means hopeless, and a diagnosis can frequently be made in the way I have indicated long before it is possible to determine the condition by physical examinations and percussions. Important as the diagnosis and treatment of the disease must seem, the prophylactic treatment is vastly more important. The dry sputum of the tuberculous patient is the principal cause of the spread of the disease, and we well know to our sorrow how a disease spreads through a family, to such an extent that up to within recent years it was thought to be an inheritance for which there was no responsibility and from which there was no escape. While it is true that the conditions which make the reception and development of the disease easy may be inherited, the disease itself is not. When we realize how the dried sputum in handkerchiefs, spittoons or anything else upon which it may have been deposited can be wafted through a room by the slightest disturbance of the air and find a suitable field for development in the lungs of some other member of the family, we do not need the theory of inheritance to explain its spread. So tenacious of life under certain conditions is this bacillus and so easily distributed by currents of air, that were I about to hire a house, particularly a furnished one in which consumptive people were known to have recently lived, I should feel like taking the same precautions regarding sterilization and disinfection that would be necessary after diphtheria or smallpox.

The responsibility of dentists as well as the danger

they encounter from exposure to this disease is worth considering. For his own protection as well as that of his patients the dentist should see to it that his napkins, spittoons, and instruments are carefully sterilized. This process can not be too thorough, because the danger is a real one, and exposure may come at any time. Considering the number of mouth bacteria that our napkins, instruments, etc., come in contact with each day, considering that most of the pathogenic varieties of bacteria enter the system through the mouth, it seems as if sterilizing methods should be employed in the most careful manner by every dentist. We can not work under strictly antiseptic conditions, it is true, as it would be impossible to sterilize the juices of the mouth or the atmosphere of the operating room. While we can do much to render the possibility of infection from these sources as remote as possible, we are only responsible for the transmission of disease from one patient to another, and the dentist who neglects to sterilize his instruments after using, has a fearful responsibility on his conscience.

The bacillus of diphtheria is of interest to oral surgeons not only because it is found in the mouth and throat, but because of the almost sensational interest that has been aroused by the treatment of this disease by inoculation of antitoxin. The bacillus, which is known as the Klebs-Löffler, is a rod of varying length, with rounded ends, somewhat resembling a club in shape. The bacilli are slightly curved, and have a tendency to arrange themselves in pairs. It is not, however, by any means an easy matter to distinguish these microörganisms from others under the microscope. I have myself seen forms which it was impossible to distinguish by the microscope alone from true diphtheria. One of these forms that I have mentioned came from a cavity in a molar tooth. This emphasizes the importance of making cultures on different media, and not trusting alone to the microscope in bacteriologic examinations.

As a matter of fact, bacteria are almost sub-microscopic; they are too small to be studied by the microscope alone, and any conclusions that may be arrived at from this method of study should be confirmed by making cultures and noting the growth of the organism.

(To be continued.)

THE CLINICAL VALUE OF THE FREE DISPENSARY.

Read at the Meeting of The Doctors' Club, Oct. 25, 1895.

BY THOMAS A. DAVIS, M.D.

President of the West Side Free Dispensary; Associate Professor of Surgery, College of Physicians and Surgeons; Surgeon to and President of the Medical Staff of Cook County Hospital, etc.

CHICAGO.

Mr. Chairman and Gentlemen:—I did not know until yesterday afternoon (through the Chicago *Tribune*) that papers were to be presented here to-night; but understood there would be some little effort at extempore discussion in defamation and laudation of the dispensary system. I was glad to see the preparation for so thorough consideration of the subject from such practical standpoints and by such distinguished gentlemen, and I am sure that, though I can offer but little of interest myself, I shall have learned much, and by the application of such knowledge do sufficient good to compensate for my shortcoming in relation to the present meeting.

The dispensary is an old institution, originating in the seventeenth century from philanthropic people as a protection to the sick poor against the greed of the apothecary, and later on was used to relieve the crowded hospitals from outdoor patients as an economic move by the State.

In 1696 Dr. Samuel Garth, an English physician and poet, became a prominent supporter of the new scheme, and his labor in that direction exposed him to the animosity of many of his own profession, especially the apothecaries. That Dr. Samuel Garth appreciated the need of the dispensary for the poor, is evidenced by his poem, a verse of which runs as follows:

THE DISPENSARY.

"There stands a dome majestic to the sight,
And sumptuous arches bear its oval height;
A golden globe placed high with artful skill,
Seems to the distant sight a gilded pill.
This pile was by a pious patron's aim,
Raised for a use as noble as its frame."

That the dispensary is valued highly by the poor is evidenced to-day by the large numbers who avail themselves of its privileges. To ascertain the opinion of the attending staff of the west side Free Dispensary on the question of "Dispensary Abuse," I asked a letter from each physician, and requested an opinion based wholly upon his experience in the dispensary service. I received fifteen letters in reply, some of which, with your indulgence, I will read:

CHICAGO, ILL., Oct. 17, 1895.

Dear Doctor:—Kindly give me at your earliest convenience your idea as to the dispensary abuse (from your own experience in the west side Free Dispensary). That is, to what extent is the medical profestion imposed upon by people able to pay for service? T. A. DAVIS, President.

Dear Doctor:—I must say in reply to the above, that I have kept no record and must depend on my memory and judgment, but I should think about 25 per cent. of the patients are able to pay a reasonable bill for doctor's services, if inclined to do so. It may be that my estimate is a little too high, but it is my opinion that it is not far from right at most.

Fraternally yours, ———.

Dear Doctor:—Replying to your circular favor of Oct. 17, 1895, I would state that in my own limited observation, I have found no case of radical imposition upon the medical profession by those able to pay for medical attendance. Undoubtedly many such people yearly take advantage of our work there, but I believe them to be very much in the minority. Perhaps only a few out of the hundreds of unfortunates.

This has been the result of my own observation.

Fraternally yours, ———.

Dear Doctor:—Your favor of the 17th inst., in which you ask me as to the amount of dispensary abuse in my own clinic at the west side Free Dispensary, is received, and after considerable thought, I have come to the following conclusions:

1. About 15 to 20 per cent. of the patients could possibly pay a reasonable office fee *for a few visits*, say two to five. They could borrow this amount if necessary to life.

2. A large percentage of the patients have consulted some physician for a few times, and not finding the relief sought, have felt financially unable to continue the treatment and have then sought the dispensary.

3. For *prolonged treatment*, as for some chronic disease, the percentage able to pay is not over 3 per cent., in my estimation.

4. Almost all of my dispensary cases are chronic in character.

Fraternally yours, ———.

Dear Doctor:—In reply to your request as to what extent I think the medical profession of Chicago is being imposed upon by the treatment of patients in free dispensaries, I will say that in so far as my observation has gone in the west side Free Dispensary, there has not come under my observation any case where I had knowledge or believed the patient was able to pay for services rendered. Of course I have always treated any that came without questioning them as to their financial condition; but in some cases where an operation was needed, and in questioning if they could pay the hospital fee necessary for their board and nurse's attention, 90 per cent. of

them would answer that their circumstances were such at present, that it would be impossible for them to raise the money.

Hoping this is satisfactory, I remain fraternally yours,

———.

Dear Doctor:—In reply to your inquiry as to the extent of imposition practiced by the public upon the west side Free Dispensary, I have to say that, from my limited experience with the dispensary, I am of the opinion that it is considerable, as at least one-half of my patients or their husbands or fathers were in regular wage-earning employments and consequently not entitled to absolutely free medical services. When the Ringer Bros. circus was here a few weeks ago, four or five of its employes applied for dispensary treatment. I recently had one patient whose husband was employed and earning $2.75 per diem. Fraternally yours, ———.

Dear Doctor:—In reply to your note of inquiry, I wish to say that, judging from my own experience, the dispensary is a public benefaction. Certainly less than one-fourth of the patients are impostors. Fraternally yours, ———.

Dear Doctor:—In reply to your request of October 17 will say that, while I know personally of many deserving cases, still the undeserving ones are far in the majority. There are very few cases, in my mind, but what are able to pay *something* for services rendered; but how to discriminate between the two remains a puzzle. I candidly believe that the present abuse of the dispensary system should be corrected in some way, if a possible thing to do so. I am fraternally yours, ———.

I have marked the percentage of impostors as I judged to be fair from the expression given in each letter, and I find the average to be about 20. That would leave 80 per cent. of those receiving attention as in need of charitable aid, and at this rate our dispensary alone has been a benefactor to two hundred and eight thousand people during the past decade. This is conclusive evidence as to the value of the dispensary to the sick poor, though I do not know that the poor could not be as well served with less sacrifice to the profession and with lessened tendency to pauperization of the poor.

That the dispensaries are maintained chiefly from philanthropic motives appears untrue. At this time the dispensary is considered an indispensable factor in a medical college, and in addition to the duties devolved from a philanthropic standpoint college requirements have entered largely into dispensary management, so that now the prime object of dispensary maintenance is educational.

The first in importance of these demands made by the college on the dispensary is in the way of material for college clinics. The second is for the proper clinical instruction to be given by the dispensary teachers, and the last we may say is beneficent, for the care of the sick poor.

In the past the dispensary has been the main source of supply for material for the clinical instruction of students in our principal medical colleges, and the service has been considered as of much value. It has been of some value, but I venture to say that if Cook County Hospital would open its doors to the medical student for the bedside study of disease (with proper restrictions under the supervision of the medical staff) the college dispensaries could be done away with, with profit to the former institution and to the medical profession and humanity at large. This at first might seem audacious, but when we investigate more closely the character of the instruction given in college clinics, st will be readily seen that the important detail of scientific clinical study is never known. The patient appearing for the first time in his life before a large class of medical students, is ushered in without his history being known, and in most instances, I venture to say that when he has taken his departure from the clinic there is little doubt but he has proved an "alibi." But the clinician is guilty before the eyes of science for so disposing of his material without exhausting the various means for making a diagnosis. His therapeusis is worse than useless, for the pathology of the case has gone unrecognized. These clinics (I have no reference to college clinics supplied from hospital material) are given upon ambulatory patients, and time is not given to the essential branches of the science, diagnosis, pathology and therapeusis. So that I almost question their utility as educational means at all. It is in the hospital alone that these most important branches can be studied.

Reasoning, then, that just in the degree that these imperfections occur in the use of patients in scientific clinical teaching does the value to the sick poor depreciate, I conclude that a change from the present dispensary system is most desirable. Before suggesting a remedy which I think will appear in harmony with scientific charity organizations, I wish to allude to the character of the men who have served as physicians in our principal dispensaries, and if my statements can not be truthfully controverted, it is the dispensary system and not the men which is at fault.

In this city, from the father of the greatest medical association in this country, down to the promising young member of the profession, nearly all have served their time in the dispensary.

The men who have accomplished most in advancing the interests of the profession scientifically, have written our medical books, and have been the educators of our present medical profession in colleges, have nearly all served their time in the dispensary. This fact, *per se*, is all that could be desired as evidence of the high moral and intellectual tone of the institution. Credit should be given to an institution so noble in its aim. It has served its purpose until now; modern scientific charity demands a cessation of the indiscriminate free offerings on account of its demoralizing and pauperizing influence upon the poor.

It has served a good purpose in stimulating the minds of dispensary teachers to study and to teach; and many diseases have been justly dealt with in exemplification of the subject at hand; but the crowding into an hour's time of so many ambulatory cases means necessarily such hasty dealing with the patients that the present dispensary system is certainly unsatisfactory, and we should hail with delight a system which would meet all the requirements of the times. May I suggest the following as a remedy:

That the County Hospital be opened to the medical student for the bedside study of the sick.

That the physicians attending that institution be selected for their ability to teach medicine, and that they be put under civil service rule.

That the present method of caring for the "at home sick" be continued by the county, through the county agent, who can investigate each case to prevent the imposition from those who are able to pay for services.

That the ambulatory sick poor, through an order from the county agent, shall be treated at a department arranged for that purpose at the County Hospital.

This, it seems to us, would provide well for the needy poor and prevent imposition, and at the same time give ample facilities for proper clinical teaching. Then there could be no excuse for the existence of those dispensaries which are maintained solely for the prestige given to the physicians who attend them

(and twenty-one of the thirty dispensaries existing in this city to-day are of that class). Now then, by resolutions being passed and distributed by the medical societies of this city, deprecating them, the "dispensary evils" would soon be abolished, and thus the profession protected from the imposition now existing so extensively.

In our scheme we have contemplated the arrangement of three classes of cases:

1. The hospital cases.

2. "At home" cases which are now being cared for by the dispensary, which has received the small appropriation from the county ($1,500 yearly for about 10,000 sick calls), barely enough to purchase the necessary medicines, and which apply through the county agent for medical attention. To reach this class of cases, the dispensary having charge of the west side of the city has divided it into nine districts —each district attended by one physician who is paid simply car fare from the dispensary.

3. Ambulatory patients who now rove around from dispensary to dispensary.

We would establish a bureau of clinical instruction with headquarters at the County Hospital. The function of this office should be to classify the clinical courses to be given, and to arrange the medical students into classes for methodic work. Small bedside classes, medical, surgical, gynecologic, dermatologic, obstetric, etc. Large classes in amphitheater, small classes in ambulatory patient department, and small classes for outside visiting departments. As to the ambulatory patients' department, or the dispensary department proper, I would adopt means of inquiry, with the object of excluding those who are not in need of charitable aid (and great care and kindness must be exercised in this department so as not to increase the mental suffering of those who are driven to accept charitable assistance). Complete histories are to be written in all cases and kept on file in the department to which the patient is assigned, and a record made on this history sheet of each visit made together with the treatment given.

Chicago has sent out to the world, chiefly to the great Northwest country, some 30,000 doctors to whom she never gave an opportunity to learn practical medicine by bedside study. Think of this great cosmopolitan city with her charity hospital, drawing its patients from two millions of people, and wonder why she does not reciprocate to the country which has so generously supplied her with the blood of commerce, by providing the country with the amplest opportunities possible for the education of its physicians. This she can do by opening the doors of her great institution for efficient clinical instruction.

AN AURAL MASSEUR.

BY EDWARD J. BROWN, M.D.

MINNEAPOLIS, MINN.

At the present time an aural masseur which is practical, safe and not too expensive, would seem to be a much felt want.

As a very simple and reasonably effective instrument I can commend the Ziegle otoscope with stiff rubber bag attachment, which I purchased in Heidelberg six years ago. With a soft rubber tube for fitting the otoscope tightly in the external canal, any safe and desirable amount of exhaustion or pressure may be secured. No competent aurist would ever think of applying such a force to the drum membrane without being able to note the effect. Having the instrument in position I have been in the habit of drumming upon the bag with the four fingers of the right hand, having found that by this means I could make from 500 to 600 distinct impressions upon the membrana tympani in a minute. The stiff bag is not a necessity, as I have found that an ordinary syringe bulb answers a very good purpose. With this instrument I have relieved a long-standing case of tinnitus aurium by six treatments.

A far easier instrument to use and so a more effective one, I have lately constructed with the aid of my friend and jeweler, Mr. Carl T. Thayer. This is a machine involving the piston action of the Chevalier Jackson masseur. It is made up of an inexpensive jeweler's lathe and a small pump attached to the table of a sewing machine. The eccentric is so great that the extension of the piston may be varied from zero to two inches, and the machine is so geared that with foot power alone from 2,000 to 3,000 movements of the piston may be easily made.

My object in this publication is not to exploit anything particularly original, but to make it possible for any aurist who desires a masseur that is neither "cheap and nasty" nor dangerous, to secure one without "mortgaging his farm."

THE NECESSITY FOR CONSTRUCTING ANOTHER HOSPITAL FOR THE INSANE IN ILLINOIS.

BY BOERNE BETTMAN, M.D.

PROFESSOR OF OPHTHALMOLOGY AND CLINICAL OTOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS; PROFESSOR OF OPHTHALMOLOGY IN THE POST-GRADUATE MEDICAL SCHOOL; PRESIDENT OF THE ILLINOIS STATE BOARD OF CHARITIES.

CHICAGO.

The need of another insane hospital must be evident to any one who has beheld the poor accommodations accorded to the insane detained in the county poorhouses. The best authorities the world over are unanimous in their opinion regarding the necessity of State care for these defective individuals. The four institutions which now exist accommodate 5,000 patients, fully 2,000 more are scattered throughout the State and should, in our judgment, find lodgment in State buildings thoroughly equipped for their care and treatment. For further particulars regarding the construction of building and the most advanced methods for the care and treatment of the patients and other matters relating to the subject of insanity, we refer to the excellent reports prepared at the suggestion of Governor Altgeld by the superintendent and medical staff of the State lunatic asylums. They have appeared in print under the heading, "Compilation of Special Reports of Superintendents of Illinois State Institutions."

Another institution with a capacity of 1,000 beds for the care of both chronic and acute cases requires the immediate attention of the Legislature. In order to obtain an adequate expression of opinion of salient features which are involved in the erection of such an edifice, the following letter was sent to authorities in this and foreign countries:

"The State of Illinois has about 7,000 insane in public and charitable institutions. Five thousand are cared for in State hospitals, the remaining 2,000 are in hospitals and wards of the poorhouses of the counties.

ANSWERS TO THE CIRCULARS OF THE STATE BOARD OF CHARITIES WITH

ANSWER FROM.	STATE CARE FOR ALL THE INSANE.	SPECIAL HOSPITAL FOR INCURABLES.	WHAT PERCENTAGE OF PATIENTS CAN WORK ON THE FARM.
Dr. Liebe, Biclefeld (German epileptic colony).	State care preferable under all conditions.	Not desirable, because it deprives the other hospitals of a working force (farm, shops, etc.)	Depends on the population and the prevalent forms of disease.
F. Kölle, Zurich. (Epileptische Anstalt).	. . . . .	Two such institutions exist in the Canton of Zurich, besides one for acute cases.	. . . . .
J. Morel, Ghent. (Highest authority.)	State care preferable *if* frequent inspections by competent inspectors are made, to stimulate the care of the patients and the work of the medical staff.	Opposed to the principle. Draws attention to the fact that a very great number of idiots and imbeciles can be taught a trade for help in asylums. Special institutions for idiots can suffice to provide the other institutions with clothes and food. Extension of workshops.	Up to two-thirds.
Dr. Zinn, senior, Eberswalde near Berlin.	State care preferred.	Special hospitals for the chronic and insane epileptics recommended (compare his pamphlet).	Between 40 and 60 per cent.
J. P. Byers, State Board of Charities, Ohio.	State care.	Board opposed to incurable hospitals.	From 50 to 60 per cent. employed at "something."
Henry M. Hurd, Supt. of Johns Hopkins.	State care essential. Refers to New York experience.	Less expensive hospital may be built for incurables.	10 to 15 per cent. male patients can work on the farm. 20 per cent. female patients can be employed in gardens, laundries, etc.
Dr. Wise, St. Lawrence Hospital, New York.	State care.	Less extensive buildings for incurables, but on the same plant.	30 per cent. of male patients (estimate) could work on farm.
Dr. Edwards, Kalamazoo.	State care.	Might be cheaper.	57.6 per cent. employed, 292 patients live on a farm 3 miles from hospital.
Dr. Edward F. Wells, Chicago.	State care essential. Cites experience in Illinois.	Not desirable. Cites experiences of New York, Massachusetts and Pennsylvania. If buildings for the insane are very cheap they are not safe, and if entirely safe they are not very cheap. Every advantage of economical provision and maintenance of comfort and occupation, which the chronic insane may have in separate asylums, may be afforded them in hospitals for all classes; and further, if any division of this kind will cost less for the chronic, it will add correspondingly to the cost for the care of the acute cases.	About 50 per cent. of the males. An equal population of the females may be employed in other directions. Useful employment is pleasurable and remedial—enforced idleness is a grievous punishment.
Dr. Hertinz, Alt-Scherbitz.	State care by all means. More economical and humane.	Acute and chronic cases to be *cared* for in the same institution but the chronic in separate, cheaper buildings with less expensive care.	70 to 80 per cent. occupied in colony.
Dr. G. W. Jacoby, New York.	State care only.	Cheaper but substantial hospitals for incurables. (New Pennsylvania hospital for the chronic insane.)	About 20 to 25 per cent. of male patients. 18 to 20 per cent. of female patients.

"Governor Altgeld decided in 1892 that the existing State hospitals should not be enlarged, but that a new hospital should be built. In order to avail ourselves of the most advanced thought and of recent experience, we beg to address to you the following circular containing a number of questions to which you will he kind enough to give us an answer from your personal experience:

"Would you prefer care of the incurable in county hospitals and poorhouses at the expense of the counties, to care at the expense of the State, either with mere State supervision or with concentration of those patients in State hospitals?

"Does the difference in the needs between curable and incurable patients justify the construction of a less expensive hospital for the chronic incurable?

"What percentage of patients do you judge fit for work on a farm (after the plan of Alt-Scherbitz in Germany)? First, male; second, female.

"Is a separate institution for epileptics desirable, and to what extent will it relieve the insane hospitals?

"Is the Scotch boarding-out system feasible in this country?

"What is, to your knowledge, the best plan for hospital of a thousand patients?

"1. For largely acute cases. (What percentage of those cases would require special medical care and nursing in real hospital wards and watch-wards, after the arrangement of Dr. Scholtz, in Bremen, compare *Allg. Zeitschr. f. Psychiatrie*, Vol. 50?)

"2. Hospital for chronic patients."

The answers to the above were pregnant with good advice and the results of years of experience. We submit a number of them in a condensed form. (See table.)

It will be observed that the prevailing thought is to improve the surroundings of the insane by placing them under State control. To construct the buidings after the pattern of Alt-Scherbitz which tends to

REFERENCE TO THE CONSTRUCTION OF A NEW INSANE HOSPITAL.

DESIRABILITY OF A SEPARATE INSTITUTION FOR EPILEPTICS.	BOARDING-OUT SYSTEM.	BEST PLAN FOR A HOSPITAL; STYLE OF HOSPITAL FOR THE ACUTE CASES.	REMARKS.
Desirable.	. . . . .	Alt-Scherbitz. All acute cases should have supervision and care of physicians.	. . . . .
Gives very good plan for an epidemic colony: 1. House for children with school. 2. Houses for patients able to work. *a* Male. *b* Female. Occupation in gardens, agriculture, bookbinding, carpenters, tailors, basket makers, carpet weavers, cobblers, etc. Trades with fire or building excluded. 3. Houses for insane epidemics. 4. Infirmary. 5. Farm, buildings.	. . . . .	Colony.	A book in the press on epileptic colonies by Dr. Kölle.
Morel is not too enthusiastic on this point. Difficulty in distinguishing epileptic insanity from insanity in patients with epileptic fits. Does not seem quite conclusive.	Not favorable in America. Rather unite those patients and employ them like the idiots and feeble-minded in workshops, etc.	Recommends to follow the advice of Dr. Scholz as given in his pamphlets. Hospital wards for acute cases.	Letter very important written in English.
Favors special wards for epileptics.	Not recommendable unless families of former attendants could be chosen.	Refers to his pamphlets preparing the construction of two large asylums (1.000 patients each) built according to his plans.	Pamphlets sent.
The institution for epileptics founded 1893, at Galliopolis, will ultimately receive all the epileptic insane.	?	No congregate buildings recommended.	. . . . .
Separate institutions for epileptics desirable as a relief to insane hospitals.	Proved a fair success in Massachusetts because there are enough impoverished families of good breeding.	Pavilion plan.	. . . . .
It will relieve the hospital from an undesirable population having a bad effect upon the system.	Not a success in this country.	Central hospital with 100 beds for each sex for acute and hyper-acute cases. Remaining 800 cases in three groups of buildings. Infirmary one-story buildings; remaining two for industrial patients of each class.	Refers to his reports.
Desirable. Would relieve asylums of Michigan of 7½ per cent.	Not a success here.	. . . . .	. . . . .
Insane epileptics should be retained in insane hospitals. An institution—largely industrial in character—is needed for non-insane epileptics who are public charges. They require an especial care which cannot be given them in almshouses.	Neither desirable or successful in this country.	Buildings in four groups, viz.: Hospital group, for both sexes, to accommodate 20 percent. of inmates; group for convalescent and mild cases, for both sexes (in widely separated buildings) with a capacity for 20 per cent. of inmates; a general wards group for males, and a general wards group for females, each with capacity for 30 per cent. of inmates. The wards should not be too large and should be arranged to facilitate efficient supervision. They should be on one floor—each complete in itself—and in two-story, fireproof, or semi-fireproof, pavilions. The cost should be moderate—neither cheap nor expensive—and certainly not extravagant.	Refers to papers on "Hospitals for the Insane—their Scope and Design," which was submitted to the board.
Special colony for epileptics rather desirable.	Boarding-out system questionable.	Cottages containing 30 to 40 patients. In chronic cases 70 to 80 may be housed in one building.	Refers to Die Kolonisirung der Geisteskranken in Verbindung mit dem Offen-Thur-System, ihre historische Entwickelung und die Art ihrer Ausführung auf Rittergut Alt-Scherbitz, von Dr. Albrecht Paetz.
Special institutions for epileptics to avoid deleterious influences of one class of patients upon the other.	Decidedly impracticable in this country.	(*a*) For largely acute cases, the "block" system with special observation and hospital wards best represented by the plan of one of the Riding asylums in England, and New Bloomingdale Asylum at White Plains, New York. (*b*) Hospital for chronic insane, cottage system as it exists in Alt-Scherbitz.	

overcome the penitentiary appearance and impressions so painfully pronounced in most of our institutions. To replace in most instances methods of restraint by the substitution of means of employment and outdoor pursuits which are prone to stimulate into healthy activity all of the functions of the body. Another noteworthy feature which of late years has come into prominence as a means of rendering more efficient the attempts at restoring the perturbed mind to its normal condition, is the establishment of a nurses' training school. The cure of insanity depends largely on influences exerted over the mind. The employment of drugs plays but a small factor in reaching the desired end. Everything depends upon psychic effects which must in a large measure be called forth by the individuals under whose constant supervision the patients are placed. It will therefore be apparent that these attendants must be well instructed to perform their duties. The diverse nature of insanity demands a variety of methods, depending upon the individuality of the patient.

A great evil which exists in large institutions is the stereotyped and uniform regimen to which the mentally diseased are subjected. This is largely due to the insufficient number of attendants and to their lack of preliminary training. The system now in vogue in general hospitals, namely, that of educating a competent corps of nurses, should be introduced into hospitals for the insane. It would redound to the credit of the State, and by restoring to reason a larger percentage of the insane, probably would prove an economical measure.

SELECTIONS.

Effect of Removal of Supra-Renal Capsules.—Brinet records some new experiments with his eleven rats whose supra-renal capsules he removed a long while ago. He finds that they can bear fatigue from muscular exertion and artificial irritation just as well as normal rats. Two of his rats were killed and dissected and the capsules had not started to grow again.

Other writers assert that accessory capsules are not unusual in rats, and this perhaps explains why eleven of the rats lived out of the seventy-five he operated upon, and why they can bear fatigue.—*Centralblatt für Physiologie.*

Experimental Study of Pancreatic Diabetes.—Chabad has removed the pancreas in animals, and in each case it has produced acute diabetes mellitus. Partial removal only produces symptoms similar to those of diabetes insipidus. The removal of a larger portion causes slight diabetes mellitus, and of the entire pancreas the acute form. He concludes that the pancreatic diabetes thus produced is entirely due to the removal of the pancreas and not to any functional disturbance in other organs. The blood loses its alkilinity in this diabetes, and as the pancreas supplies alkali to the blood, with its removal the blood ceases to be alkaline. The favorable effect of alkalies in diabetes can thus be explained by these experiments on animals. They have fully established the fact of the existence of pancreatic diabetes.—*Gazz. degli Osp. e Clin.*

Serotherapy in the Treatment of Cancer.—A number of French observers have been experimenting with this treatment, and although they have not succeeded in effecting a complete cure, yet what they have accomplished is remarkable. 1. In the fifty cases they studied, the pain subsided immediately, and this unexpected phenomenon lasted during the entire course of treatment. 2. The ulcerations improved, healthy granulations and scabs formed, while the tendency to bleeding diminished. 3. The swellings grew smaller, the infiltration of the neighborhood ceased, the infiltrated glands shrunk, and the entire cancer often showed considerable decrease in size. 4. In the severest, most hopeless cases, the development of the cancer seemed definitely arrested. 5. The general health improved.

Three months of this improvement were followed by a stationary stage. After a while new knobs were found near the almost healed center, but their development was very slow. The injections produced slight exanthema in a few cases. They were followed by syncope in four, but all phenomena tend to prove that the course of the cancer was very much delayed by this treatment.—*Centralblatt für Chirurgie*, Jan. 11, 1896.

The Bacteria of Catgut and Its Sterilization.—Dr. Lajaczkowski writes to the *Przeglad Chir.* that he finds another bacillus in catgut beside Brunner's, which he calls alpha-catgut bacillus, while he names his beta. The beta bacillus is a thin long rod with rounded ends, extremely movable. Certain differences between the alpha and beta appear when line and drop cultures are made of them, which must be referred to the originals to be studied. Both showed powerful resistance to the action of antiseptics and also to dry and moist heat, in both of which the beta surpassed the alpha. His experiments in this line were very interesting, as also his efforts to ascertain the effect produced by these bacilli on the living organism, especially where they prepared a soil for the pus cocci. His experiments resulted in finding that while subcutaneous and intravenous injections of both alpha and beta in rats produced no perceptible effect, yet, when mixed with streptococci, they caused the death of the animal in two to three days with general septic symptoms. He concludes, therefore, that the catgut bacilli are harmless in themselves, but seem to increase the injurious effects of the pus cocci. He announces that catgut can be thoroughly sterilized by soaking it twenty-four hours in ol. juniperi twelve hours in ether and sixty hours in hydrochloric acid 1 to 500. Another method is to apply the Reverdin-Braatz process, temperature 150°. Still another is to keep it in boiling xylol two and one-half hours.—*Centralblatt für Chir.*, Jan. 4, 1896.

Pathology of Castration for Hypertrophy of the Prostate Gland.—This is now one of the questions of the day, and the fact has been established that castration produces the desired atrophy. Prjewalsky has been experimenting in Russia to find out the cause for this result of castration. He has removed the testes of dogs, the nerves of the seminal plexus in some, and experimented in various ways. He finds that the nerves play the principal part in this problem, which is very complex. His conclusion is that it is the lack of anatomic continuity in certain nerve fibers which produces the atrophy after castration. In every case where he removed the external seminal nerves in a dog, there was disordered testicular secretion at once. Suppressing the function of the internal seminal plexus produced complete testicular atrophy, resulting in the entire disappearance of the parenchyma of the organ. The excision of "Cooper's nerve" produced atrophy of the prostate gland, but had no effect whatever upon the size of the testes.—*Gaz. Méd. de Paris*, Jan. 11, 1896.

Estimation of Blood-Corpuscles.—The *Centralblatt für Physiologie* states that Bleibtreu's method of determining the volume of the corpuscular elements in the blood has been criticised unfavorably by Eykman (*Pflüger's Arch.*, 50, p. 340), who points out the following most important error: According to the formula to be used in the calculation the volume of the blood-corpuscles is altogether too small, notwithstanding the fact that they are increased in size, whenever the blood is diluted with a hypisotonic solution. This is owing to the decrease in the amount of water in the serum. After a detailed account of the operation of this and other sources of error, he describes certain experiments which show that the 0.6 per cent. solution of common salt advocated by Bleibtreu, produces marked deviations from the correct estimates obtained when isotonic solutions are employed. After noting the lowering of the freezing point, he measured the osmotic energy of the serum according to Gryns' method. This is based on the assumption that the volume of the blood-corpuscles remains unchanged in a liquid which does not affect their substance, if the liquid has the same osmotic energy as the original serum. It proceeds by centrifugizing defibrinated blood to the constant volume of the residuum. The liquid above is then removed and replaced in several different simultaneous tests by solutions of salt, varying in strength, and centrifugized until the balance is restored. A solution which does not produce any change in the residuum he considers isotonic.

Bleibtreu's objections to this centrifugal method only apply when the diluting liquid affects the substance of the corpuscles. Harmonious estimates of the blood unmixed, or mixed with solutions of salt approximately isotonic, are certainly obtained by this method. It also establishes the fact that the substance of the blood-corpuscles increases considerably when mixed with a 0.6 per cent. solution of salt.

Bleibtreu replies to his critics, Eykman and Hamburger, in a later issue of *Pflügers Arch.*, p. 405, acknowledging that his method estimates the volume of the corpuscles too low on account of the fact that the 0.6 per cent. solution of common salt is not isotonic with the plasma. But changing to isotonic dilutions, he claims that his method will be found of great service. He no longer sustains his former unconditional condemnation of the centrifugal method, although he still believes that even in the most favorable cases it will not give the actual volume of the blood-corpuscles, but only a proportionate amount. On account of the varying sizes of the corpuscles in pathologic blood, we can not expect absolutely correct proportions between the actual and the estimated volume, and differences will probably be found similar to those noted between the blood of different animals.

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SATURDAY, FEBRUARY 8, 1896.

THE ATLANTA MEETING.

As usual, the JOURNAL of the ASSOCIATION will manage an official train from Chicago to Atlanta direct without change of cars. Every convenience will be furnished, and it is expected that the train will leave Chicago on Sunday afternoon, May 3, arriving in Atlanta Monday at 4 P. M. We hope all of our members from the West and Northwest who desire to attend the meeting, will make arrangements to concentrate on JOURNAL train at Chicago. The President, Trustees and several members of the Business Committee will be on this train. The Secretary of the ASSOCIATION, DR. ATKINSON, has already made application to the various railroads for the usual reduction in rate of fare, which will be applicable all over the United States. The large increase in membership of the ASSOCIATION should make this an easy task for the permanent secretary.

Section officers will facilitate the preparation of the program by forwarding titles of papers to the JOURNAL as fast as received.

THE HYGIENE OF WAR.

Under the heading, "The Hygiene of War," the *Lancet* (London, England) in a recent issue refers to a work undertaken by DR. PAUL MYRDACZ, staff surgeon-major of the Austrian army, which bids fair to supply reliable data to all persons interested in military vital statistics with reference to active service. Two fasciculi of his work have been issued, one giving the history and present state of the French sanitary service and the other the medical history of the Crimean war; but DR. MYRDACZ intends to embody in his work a description of the health departments of the principal armies of Europe, a medico-chirurgical history of recent wars, the effects produced by modern projectiles and a general review of improvised hospitalization and transport. According to the *Lancet*, medical officers of the Austrian army are obliged to satisfy examiners regarding their knowledge of the Crimean campaign, with especial reference to sanitary matters, before they can be promoted, and it was in order to act as a text-book for this ordeal that this historical fasciculus was originally written. It contains a complete *resume* of the chief events of the memorable siege of Sebastopol. Details concerning the military operations are given side by side with a full account of medical and sanitary procedure, the whole forming an animated recital of a most important campaign.

So far as regards the organization of the hospital departments of the great armies of the world we have already been informed fully by MAJOR J. VAN R. HOFF, U. S. A., in his excellent paper on the subject read at the last meeting of the Association of Military Surgeons of the United States, and recently published in pamphlet form. MAJOR HOFF with laudable patriotism includes the Army of the United States in his paper, although its present numerical strength is nearly equaled by that of the garrison of more than one European city. He is justified, however, when we consider what the Army of the United States has been and what it would be if the exigencies of the times called for the military strength of the States to assemble under the National flag. After describing the present status of the medical department and hospital corps, he comments on the fact that we have no detailed scheme of organization for active service. "Contrasted with the almost perfect sanitary organization of other armies, our own unpreparedness in this direction points a moral we can ill afford to ignore."

The new Army Regulations under the heading "Field Service" has only four short paragraphs in relation to the work of the Medical Department, and in none of these is there the slightest suggestion of organization on the grand scale. The Regulations of 1889 contained an outline of the methods to be adopted in war service and for the care of the wounded on the battle-field; but this has been omitted from the new edition, probably to be embodied in the Regulations for the Medical Department to which it properly belongs. It is understood that the manuscript of these latter regulations, prepared by SURGEON GENERAL STERNBERG, has been approved by the SECRETARY OF WAR and will be published in a short time. It is unlikely, however, that they will enter into the details of hospital organizations such as are

to be found in the existing status of the medical departments of the large armies of Europe. We do not require to have our small army organized by brigades divisions and army corps. It is scattered in small commands at military posts from the Atlantic to the Pacific. Nor do we require to have our medical officers and hospital corps detachments organized for attachment to skeleton or possible brigades and divisions. They are at present as scattered as is the Army. But just as our military men keep always in view the possibility of war, as the *raison d'etre* of our military establishment, and familiarize themselves with all the methods by which an organization for war may be built up on our standing army as a nucleus, so our medical and other staff corps have always in view the same possibility and the necessity for their expansion under a call for war service. MAJOR HOFF'S paper is itself an illustration of this on the part of an army medical officer, and the existence of the Association of Military Surgeons before which the paper was read manifests a full appreciation of the subject on the part of the medical officers of the military forces of the States. We do not, therefore, coincide with MAJOR HOFF in his view that our condition in this regard is one of unpreparedness; for should the emergency arise we feel confident that under the present able administration of the Army Medical Corps the expansion of the Department would go on *pari passu* with the aggregation and consolidation of the troops mustered into service under the call of the PRESIDENT for an armed force, and that by the time we had brigades, divisions and corps to go into battle we would have brigade, division and corps ambulance organizations to care for their wounded.

MEDICAL MAKESHIFTS.

The advocates of higher medicine have no more serious duty than to impress upon the members of the medical guild, especially upon the men of the future, the necessity for maintaining and asserting the dignity of their profession, the importance of its labors to the welfare of the body politic, as well as to the health and vigor of individual bodies physical, and the pecuniary value of its services to the State, compared with those rendered by divines, jurists, legislators and executive officials.

The eleemosynary relations, which practitioners ungrudgingly assume because of the dominant humanitarianism of their calling, have, in fact, operated to belittle their occupation. When the terrifying shadow of death has been dissipated, the skill of the doctor, who has caused the house of mourning to become one of rejoicing, is forgotten. Equivalent remuneration is seldom tendered, and if after long waiting a charge is presented it is apt to be questioned, though it be rarely proportionate to the value of the life saved. Where the attorney receives thousands of dollars, not one physician in a multitude can expect hundreds, and the retainer of the counselor in advance of his services, has no parallel with the physician undertaking a new case. The recent decision of a St. Louis court sustaining a surgeon's charge of $5,000 for a trephining operation, is a notable exception in medical experience, as was the honest declaration of the learned judge that he allowed the bill, "not simply because the financial condition of the defendant was such as to allow so large a bill to be paid without serious inconvenience, but on account of the character of the operation, which of itself was well worth the fee demanded," but would even this judge have admitted that the successful management of a case of typhoid fever implied quite as much knowledge, skill and judgment, and was entitled to a similar compensation? The instance is still recent where a well-known millionaire contested a smaller fee than this in a case involving risk to life, at the very time he had given a famous lawyer, without objection, a retainer of $10,000 in a mere question of property.

It is this ignorance of the weighty value of physicians' services, and the diffidence of the latter in asserting it, as well as their tacit acquiescence in the popular estimate of that of which the public is not competent to judge, that has led to makeshift methods in all matters medical in municipal and national administration. COL. WARING, the Commissioner of Street Cleaning of the city of New York, deserves commendation, not alone for the excellence of the service he has instituted as for his fearless valuation of it. He has done the work as it should be done, and not upon the miserable makeshift principle of making the money available go as far as it could. State Boards of Health have demonstrated their value to their several communities, but not one of them is bold enough to insist upon the really necessary provision of means by State legislatures, and they do their work as best they can with what is given them. An epidemic is averted, the loss of millions through trade paralysis is prevented, thousands of lives of wage earners are saved, but not one of the members of these health boards receives anything but a pitiable salary, if paid at all, and the expenditures of the board have to be itemized to unit dollars and fractional cents. A million or more dollars are voted for a battle-ship; would a million be appropriated as promptly to defend the country against such an enemy as yellow-fever, which can slay more victims in less time than powder and shot, paralyze trade more effectually than a blockading squadron, and retard progress more seriously than the occupation of a city by a beleaguering army? There is no National Department of Health in this country—absolutely necessary as it is admitted to be—because of the prevailing makeshift spirit, which induces the people to

get along without one, and thus save its cost, for costly it need must be, if it be what it should.

Another illustration of the motive of this article is to be found in the recent report of the Surgeon General of the Navy, who in explaining the impossibility of filling the vacancies of the medical corps, says: "The law does not provide for the temporary appointment of acting assistant surgeons to meet the emergency that has arisen," and it is fortunate that these makeshift appointments are not permitted. The emergency referred to is simply an existing necessity for the full complement of medical officers, authorized by statute, and therefore not a mere temporary emergency at all, but a persistent, urgent deficiency in the organization of a department of the government due to the failure to provide the requisite number of officers, for causes easily remedied by legislation, and there is no reason why recourse should be had to makeshifts in the shape of acting assistant surgeons, who are not required to pass the examinations for admission, which are presumably merely the measure of ability to do the duty required, but who, notwithstanding their inability to pass these examinations, are nevertheless, expected to perform this duty. Naturally, the same thing will occur as when the acting assistant surgeons, who having served throughout the civil war, interchangeably with regular officers, applied, as they were justified in doing, by reason of long, faithful, and satisfactory service, to be admitted to the permanent class, although they had never fulfilled the preliminary requirements.

While there is in fact, no excuse for makeshifts in any branch of the national service, they have not been less uncommon in the Army than in the Navy. Not long ago, a cavalry officer, relieved from duty at an Army Recruiting Rendezvous, was narrating his experience during his term of service and stated in reply to the inquiry as to who was the medical examiner associated with him, that there was none, and upon a physician expressing astonishment that expert professional duty of this important character should be exacted of him, said that this was not unusual. "I held Tripler's manual open in one hand, while I followed it as best I could," he added. "But do you know how to auscult?" and after the nature of the operation was explained to him, he replied, "Oh! I put my ear down and if I did not hear anything particularly alarming I passed the man!" When it is remembered that the recognition of visual, pulmonary and cardiac defects is the most difficult of the medical examiner's professional work, it is not surprising that this cavalry examiner admitted that a great many of his recruits were subsequently found unfit for service. Every such improper enlistment, involving discharge for disability existing at the time of enlistment is a matter of indefensible expense to the government, besides impairing discipline and efficiency if the physically defective recruit is retained to avoid the loss of pay, clothing and transportation. Nothing can justify the makeshift principle which requires an incompetent individual to discharge duties for which a sufficient number of qualified officers ought to be provided; nor is there any excuse for employing army hospital stewards or naval apothecaries in the rôle of medical officers, whether as physical examiners, considered the most delicate and responsible of military and naval medical officers' duties, or as prescribers and care-takers in cases of disease or injury, when the possibility of fatal consequences or of permanent impairment should preclude their ever handling scalpel or hypodermic syringe. Whether it be two hundred or three hundred or more thoroughly qualified medical officers who are required for the proper performance of these duties, they should be obtained at whatever cost, and no pretense of economy can ever justify their substitution in a single instance or under any circumstances, by incompetent makeshifts.

THE INFLUENCE OF PUBLISHERS UPON MEDICAL LANGUAGE AND LITERATURE.

Neither the lay or the professional public has any adequate understanding of the methods whereby, and of the extent to which, publishing houses are influencing opinion, and of all the motives at work. An illustration of the fact lately came to our notice, that throws quite a vivid light upon the ways of bookmakers. A certain lay dictionary of the English language having an extensive sale especially in some parts of the United States, throws the weight of its authority in favor of certain methods of spelling words. A rival publishing house proceeds to hire a a corps of "expert" philologists to re-edit its own rival dictionary, and instructs said philologists to spell all disputed words differently from the competing book, if for such difference of orthography there can be found any sort of a decent excuse. The smile that wreathed the face of the lexicographic editor as he told this "plain unvarnished tale," also expressed clearly enough the fact that philology, good taste and general usage, had been thrown, like physic (or physick), to the dogs, and that commercialism was the sole motive in continuing useless word-wrangling. The silly public would feel compelled to buy both books in order to justify its hodge-podge of linguistic customs. At this rate, it is plain that every publishing house will, in time, have its authoritative lexicon, and every "disputed word" may have as many forms and varying definitions as there are enterprising publishing houses.

But the Babel-makers do not stop here. Each publishing house must abide by its own "standard," and so all books and periodicals published by the firm are cut and clipped to fit the Procrustean bed established by the dictionary published by that firm,

regardless of authors' rights and wishes, regardless of the original from which reprints and subsequent editions may have sprung. It thus becomes evident that the formation of dialects and new languages is not to be ended by the supposedly sufficient influence of intercommunication and the printing press. The establishing of a dominant tongue may thus turn out to be dependent upon the commercial supremacy of the publisher who prints the most books and that pushes his own dictionary into the most general use.

Now in medicine we are actually enduring or fast coming to something very like this. A medical publisher that has published a medical dictionary makes that the rule of the printer's office regardless of all other considerations. All its books and periodicals are put out with spellings, etc., guaranteed as correct by the special authority, entirely oblivious of philologic principles, of common usage, or of desirable reforms. Each thus pursuing his own orthographico-financial way, confusion is growing fast and furiously worse confounded. The poor proof-reader or typesetter, if he change his employer, is constrained to unlearn a thousand rules that held across the street or in a neighboring city, and learn anew what the particular authority demands that has been chosen by the firm—and chosen because "we must uphold our own dictionary sure!"

Thus is born the bastard of opposition to all progress in medical language. That such progress is extremely desirable, nay, absolutely necessary and inevitable, no dispassionate observer would deny. That such cunning trickery of publishing houses can finally and entirely prevent betterment and shortening of the language is absurd. All they can do is to delay and make reform more difficult. Come it will despite the most stupid conservatism and the most selfish commercialism. Americans will be as likely to spell center and liter as Frenchmen do, as likely to stick the *u* back into *color* or *favor*, or the *æ* into *hemorrhage*, *ether*, or *gangrene*, as they will be to give up Pullman cars for old stage-coaches, or to dress once more in stocks and stoles.

But, as says the old saw, we have yet the tail to skin. The ingenuity of the schemer is not exhausted. There is left the commercial medical college, its "List of Books Recommended" and the special professorial commendation of a certain text-book. The diploma-mills are fast becoming annexes of the publishing business. The only limit set, happily, by the very nature of things, is the effective one of competition. A traveler tells how in waiting for game on a Scotch moor, he told his gillie all about the wonders of American civilization, its Niagara, its twenty-five story buildings, telegraphs, phonographs, wizards and billionaires, receiving from his listless listener no glance or word of interest, no slightest sign of wonder. Finally in despair he asked Jamie what he thought of these things. "Aweel, mon," said the pawky doubter, "ye should know I'm something of a liar mysel'." A fortunate barrier against medical text-book monopoly is assured by the fact that each great man has his own best text-book on the subject; or, if not, he has at least his own little private jealousy and rivalry to spur him to say, "Thus far and no farther!" In this way, as so often, we find, "there is some soul of goodness in things evil."

And the books, such books! as have been issued from the press during the past twenty years! When conceit, ignorance and avarice come to the judgment bar for their rewards, the heavenly bank will certainly be soon bankrupt!

THE MEDICAL PEDAGOGY OF CHICAGO.

In connection with the editorial summary on medical education in a late issue of this JOURNAL, it is interesting to note that the *Cook County Medical Announcement*, "a quarterly periodical of local medical information," is in its latest issue a directory of Chicago physicians engaged in medical education at the present time. These number 590, or just about one-sixth of the total (estimated) number of medical practitioners in the city. The list, however, does not profess to include any of the physicians connected with the schools who have not regular or definite appointments, and therefore may be considered as an under, rather than an over, statement of the total of medical teachers, and we can assume legitimately that over one-sixth of Chicago's medical population are of a sufficiently high grade to be professors or instructors in one or the other of the thirteen or fourteen different institutions of medical learning. The list also gives other interesting data than merely the enumeration; it shows that quite a respectable minority are pluralists, so to speak, holding positions in more than one faculty, and there is one instance, at least, where the same individual is given as at once a professor in four different institutions, representing the regular, homeopathic and eclectic schools of practice. The lion has evidently lain down with the lamb and the medical millenium must be close at hand.

There are other curious facts to be found in this list, suggestive of still more curious reflections. The most impressive one of them all, however, is that if the profession of medicine is not overdone in this country, if there is not already a larger proportion of doctors than the population can support and the ratio disastrously on the increase, it is not through any fault of a very considerable and eminently respectable minority of the medical practitioners of the great city of Chicago, who are presumably doing their best to increase and multiply the full-fledged members of our honored profession. So large a plant should have a correspondingly magnificent product.

Speaking seriously, however, these figures naturally bring out the question: What is the value to the profession and to the world of this multiplication of institutions of medical instruction? Why should there be five regular undergraduate medical schools in Chicago to say nothing of "homeopathic" and other irregular institutions? There is no need to give the answers to the questions; they will suggest themselves to any well informed physician.

An honorable rivalry between two, or, at most, three well established and equipped medical colleges in the same medical center is in its way a good thing, if the efforts are only directed to improving the quality of the instruction without too much reference to the quantity of doctors turned out on the world and the corresponding increase of fees. But any very extensive competition makes true the business adage about its being the life of trade and may in the long run tend to the disadvantage of the profession as a whole, whatever benefits may accrue to the few, or, perhaps, under the circumstances, to the many who receive the advertisement as professors in a medical faculty. The dispensary evil, in regard to which so much has been said, may yet come to have its counterpart in the medical college evil, alike, though perhaps not equally, detrimental to the best interests of the medical profession.

It would be of interest had we the similar figures for other medical centers, New York, Philadelphia and St. Louis, to compare them with those given for Chicago, and to fully round out the compilation of evidences of medical educational zeal we ought also to include the data of physio-medical, vitapathic, Christian science and other so-called medical schools that flourish and are recognized as such by a gullible public.

THE TRUE AIM OF SICK-ROOM DISINFECTION.

The *London Lancet* has attempted an analysis of the latest improvements for the practical disinfection of living rooms. In its editorial columns it is remarked that the frequency with which second and third case of scarlet fever or "recurrences" appear in houses that have been disinfected by the inspectors of sanitary authorities, casts grave doubts on the efficacy of procedure usually adopted, despite its official sanction. Stripping the walls, lime-washing walls and ceilings and scrubbing woodwork and floor boards with soap and water are indeed effectual enough, and to these when thoroughly done we are disposed to ascribe any successful results rather than to the more technical process of so-called disinfection by sulphur fumes, which is little better than a superstitious rite or incantation shorn of the religious character it had in the mind of ULYSSES when he "fumigated" the halls desecrated by the massacre of his wife's suitors, after removing the corpses and washing away the blood with a promptness that precluded all thought of other than moral pollution. But in the light or bacteriologic experiments dry sulphurous acid fumes, whether generated by burning sulphur or carbonic acid sulphid, or, as has of late become the fashion, by opening cylinders of the compressed gas, are for all practical purposes useless. The gas would act as a powerful germicide on articles of fabrics previously saturated with water, but its bleaching action precludes its employment in this way with colored material, carpets or curtains, and it is as what is called an "aerial disinfectant" that it holds its ground in popular esteem. But aerial disinfection is an absurdity; no one wants to purify the foul air, which is easily enough removed by simple ventilation. In disinfecting a room the true aim is to kill the germs contained in dust on ledges or in the crevices between the boards, or adhering to the walls and other surfaces, and the dry gas is powerless to do this, which is best obtained by a sublimate solution of the strength of one part in 1,000, or by lime- (not white-) washing, providing the lime be freshly burnt and caustic; the carbonate of lime, or chalk, used in white-washing under the name of whiting, and into which lime is converted by long exposure to the air, being inert. The series of experiments on the infection and disinfection by various means, of wall paper, distempers, and other wall surfaces conducted by DR. KRONBERG, under the direction of the late PROF. UFFELMANN, at Rostock, showed that subsequent scraping were invariably and almost instantaneously sterilized by washing or spraying with the sublimate solution, and equally so by the lime-wash after the lapse of twelve or twenty-four hours. *The danger of corrosive sublimate is we believe exaggerated*; since the smallest fatal dose for an adult being probably three to five grains—equal to at least a quarter of a pint of the solution—accidental poisoning with the solution is practically not probable, and as a further safeguard it might be colored with indigo or "laundry blue." Carbolic acid, which is sold without restraint and is in universal use, is more dangerous on that account, and is, indeed, frequently employed with suicidal intent and with fatal effects. In France, Germany and Italy sublimate has nearly superseded all other disinfectants, and its neglect in this country is inexplicable. As to carpets, bedding and clothing, all that is capable of being washed should be plunged into a copper of boiling water for a quarter of an hour, and such articles as would be spoiled by this treatment should be disinfected by steam.

This point in reference to the powers of sulphurous acid gas, whether dry or moist, will in the future, we think, receive a fuller consideration than it has had in the past, namely, that it leads to a prolonged aeration on the part of the occupant after the officials have left the premises. Here we have an aerial disinfectant that is a clear gain, supplementary and complementary to the routine work of the disinfecting staff.

CORRESPONDENCE.

Treatment of Nasal Duct Obstruction.

CHICAGO, Feb. 3, 1896.

To the Editor:—If I may be permitted to add a few words to Dr. Wandless' letter on this subject I would say that the statement of Dr. Taylor, regarding the frequent failure of probing for the cure of stricture of the soft parts, is largely borne out by the facts. As practiced by the average ophthalmic surgeon the use of probes accomplishes very little toward relieving the lachrymation and other annoying symptoms. Indeed, stricture of the naso-lachrymal duct has long been one of the opprobria of eye surgery and when one considers the pathology of this condition we have at once an explanation of such an unsatisfactory state of affairs. Suppose the general surgeon were to rest content with an internal urethrotomy in these cases which, pathologically, closely resemble the simple form of nasal duct obstruction; what would be the probable result six months afterward? About as much as is accomplished by merely incising the cicatricial band that usually constitutes ordinary obstruction in the duct!

If Dr. Wandless' program could be followed in all cases a cure would doubtless result, because if there is one thing that is established in these cases it is the necessity of faithfully using as large a probe as possible for months and even for years at a time. Cutting through the stricture combined with the irregular or occasional use of a small probe, not only accomplishes nothing but such a procedure makes the latter state of the patient worse than the first and discourages him from undergoing further treatment. He wanders over the country deriding ophthalmology in general and his late oculist in particular.

Whatever Texan patients may do my experience of Northern sufferers is that they soon tire of coming to one's office for months, even at increasing intervals. *Teach them, then, to do their own probing* and have them thoroughly understand that their ultimate cure lies entirely in their own hands. Use large, aseptic probes and disinfectant collyria and in two weeks after the preliminary operation the patient may be dismissed, having in the meantime, been taught how and when to probe his (more often *her*) own duct. My experience is that all patients, even the most nervous women, learn to do this easily—often better than the oculist himself. CASEY A. WOOD, M.D.

An Inquiry Concerning the best Climate and Waters for Bright's Disease.

CAMDEN, N. J., Jan. 26, 1896.

To the Editor:—Can you advise me what location and climate, in this country, offer, in your judgment, the most hope for a person afflicted with incipient Bright's disease to visit? Any answer, on inquiry through THE JOURNAL, you may be good enough to make will be appreciated by

Yours truly, E. L. B. GODFREY, M.D.

From a Retired Member.

NEWPORT, N. H., Jan. 28, 1896.

To the Editor:—Your letter with sample copy of the JOURNAL are received. Many thanks for the remembrance. In the success of the AMERICAN MEDICAL ASSOCIATION and its publications I have felt a deep interest from the time of its organization in 1847. I have most of the annual reports and *all* the volumes of the JOURNAL until July, 1891. During a severe and protracted sickness that spring and summer, through some misunderstanding, my membership fee was not sent and my name, as it was right it should be, was dropped from the subscription list. As delegate from our State society I attended the annual meeting in New York in 1864 and in San Francisco in 1871, and as a permanent member, in Boston and Washington, always finding the occasions full of pleasure, instruction and benefit. My interest in medical literature and science, and in the power, influence, strength, honor and usefulness of our noble profession remains unabated, notwithstanding I am within less than three weeks of my eighty-sixth birthday, an hour too late in life's evening to warrant a renewal of membership.

Most respectfully yours, J. L. SWETT.

Opinions of The Journal.

99 BROADWAY, SOUTH BOSTON, MASS., Jan. 31, 1896.

To the Editor:—Thank you for the beautiful plates you had provided for my article on splinting.

The JOURNAL under your management has become of medical journals in America *facile princeps*. The matter published during the year is considerably in advance of that in the text-books, and the typographic dressing you give it is worthy of the matter. I congratulate you on your excellent work since editing the JOURNAL, and hope the JOURNAL shall enjoy your services until it attains the circulation it deserves—20,000—and indefinitely after that. Very sincerely,

EDWARD A. TRACY.

. . . . . I have thought for some weeks that I would write you and express my pleasure and appreciation of the way in which you have conducted the JOURNAL. It now stands clearly at the front, and I have only to say, God bless you. HENRY D. HOLTON, M.D.

Brattleboro, Vt.

ASSOCIATION NEWS.

Atlanta Physicians Preparing for the Meeting.—There will be an important meeting of the regular physicians of Atlanta at the Young Men's Christian Association hall to-morrow night at 7:30 P.M. It will be under the auspices of the Atlanta Medical Society, but all regular physicians, whether or not they are members of the society, are invited to be present.

The AMERICAN MEDICAL ASSOCIATION will hold its annual meeting here in May and the meeting will be held to take the first steps toward the entertainment of the convention. Dr. Beverly Cole, of California, is president of the AMERICAN ASSOCIATION and the most distinguished doctors of the country are to be found in its ranks and will be here at the meeting.

It is expected that there will be about fifteen hundred doctors here when the meeting is called to order. The physicians of Atlanta are determined that the distinguished visitors shall be given the best entertainment possible while they are here.

Dr. Willis Westmoreland, of Atlanta, is chairman of the committee of arrangements, and he is taking an active interest in the coming meeting.—*Atlanta Journal*, January 20.

NECROLOGY.

MARCUS L. TAYLOR, M.D., a resident of Booneville, Miss., died on the 25th ult., at Philadelphia in the Hospital of the University of Pennsylvania. Dr. Taylor was born about 1850. For nineteen years he was connected with the United States Army. While stationed at Jefferson Barracks he was notified of the serious illness of an old friend. He started out on horseback for a long journey of 170 miles in the midst of a blizzard. He reached his destination safely and accomplished his purpose, but was never well afterward, owing to the exposure during the ride. He had decided to practice medicine in Philadelphia and came here for this purpose, but he was obliged to seek hospital treatment soon after his arrival. His death was due to malaria and asthma. He leaves a widow. His body was sent to Booneville for interment.

EDWARD H. TINEN, M.D., of typhoid fever, at Chicago, January 28, aged 22——George F. Magoun, M.D., of Grinnell Iowa, January 30.——Henry Ladd, M.D., of Melmore, Ohio, January 30, aged 83.——J. P. Gruwell, M.D., of Alliance, Ohio, January 20, aged 85.——Felix P. Callahan, M.D, of Peoria, Ill., January 29.——A. L. Harris, M.D., of Atlanta, Ga., January 28.——J. W. Pugh, M.D., of Stockton, Cal., January 24, aged 78.——John Healy, M.D., of Raywick, Ky., January 28, aged 60.——M. L. Stafford, M.D., of Luray, Mo., January 26, aged 45.——J. M. Waldron, of Porter, Mich., February 1, aged 36.——John R. Meachem, M.D., of Racine, Wis., February 1, aged 72.——Thomas Burgess, M.D., of Nashville, Tenn., January 30, aged 69.——P. P. Whitesell, M.D., of Noblesville, Ind., January 28, aged 73.

THE LATE DR. BASIL NORRIS—Your committee respectfully submit the following expression of respect, and resolutions in memory of the late Dr. Basil Norris:

He who acquires the knowledge of preserving health, obviating disease or death and exerting himself to do good to all men, deserves the homage of his fellow-creatures while living, and when he has passed away he should be held in pleasant and appreciative memory by all who have known him. Dr. Norris, we are gratified to know, received a very large share of esteem and honor, and that we, the members of this Society, of which he was an honorary member, do record the fact that we sincerely cherish the memory of our departed friend and brother.

Dr. Norris was born in Montgomery County, Maryland, March 9, 1828. He was graduated at the University of Maryland in 1849, and entered the United States Army in 1852. He served with troops in Texas, Utah and New Mexico until 1862. He was then promoted Surgeon, and in 1863 was appointed Medical Director of one of the grand divisions of the Army of the Potomac. For meritorious service he was raised to the rank of Lieutenant-Colonel, and finally Colonel. When retired, he was Medical Director of the division of the Pacific. His writings are said to have been numerous and scholarly. He was a genial man, an accomplished physician and efficient officer. He died in San Francisco, Nov. 11, 1895.

WHEREAS, Our professional brother, Dr. Basil Norris, who after a successful career, has been removed by an All-wise Providence, therefore,

Resolved, That as an earnest friend and co-worker his death is sincerely felt by this Society; and that to his relatives and friends we tender our sympathy and condolence;

Resolved, That a copy of this memoir be transmitted to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and the medical journals of this State, accompanied by the request that it be published.

G. W. DAVIS, M.D.,
F. B. CARPENTER, M.D.,
C. E. FARNUM, M.D.
Committee of San Francisco Medical Society.

BOOK NOTICES.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume VI. "Diseases of the Respiratory Organs." New York: William Wood & Company. 1895.

This volume is accompanied by a note from the publishers which states that "owing to unforeseen difficulties in the preparation of volume V, it has been necessary to issue volume VI out of its natural order. Volume V will be the next volume to appear." The contents of this volume include the following articles: 1, "On Diseases of the Nose," by Prosser James, of London; 2, "Diseases of the Accessory Sinuses of the Nose," by Jonathan Wright, of Brooklyn; 3, "Diseases of the Naso-pharynx and Pharynx," by E. J. Moure, of Bordeaux; 4, "Diseases of the Ear," by Albert H. Buck, of New York; 5, "Diseases of the Tonsils," by E. J. Moure, of Bordeaux; 6, "Diseases of the Larynx," by Francke H. Bosworth, of New York; 7, "Diseases of the Trachea and Bronchial Tubes," by Sir Thomas Grainger Stewart and George Alexander Gibson: 8, "Diseases of the Lungs (Excluding Croupous Pneumonia and Tuberculosis)," by Winslow Anderson, of San Francisco.

The names of the authors are so well known and authoritative, that one knows instinctively that the subjects respectively assigned them will be properly treated. An important statement is made by Moure, p. 289, where in speaking of the antitoxin treatment of diphtheria he says the period of immunity "conferred by the antitoxin has not been determined, but would appear to be about two or three months."

The publishers have illustrated the work well, and its appearance is uniform with the preceding volumes. We can truthfully award this volume the same high praise that was given its predecessors in the series.

An Atlas of the Normal and Pathological Nervous Systems. Together with a Sketch of the Anatomy, Pathology and Therapy of the Same. By DR. CHRISTFRIED JAKOB, with an introduction by PROF. DR. A. D. STRUEMPELL. Translated and edited (authorized) by JOSEPH COLLINS, M.D. 8vo, cl., pp. 230. New York: William Wood & Company. 1896.

This is No. 2 of Wood's Medical hand atlases, and has 221 figures on 78 plates, three of them folding charts. To the anatomist, the physiologist, the clinician, and as well the general practitioner, who desires to comprehend the clinical picture as seen at the bedside, this atlas will be invaluable. It gives the relationships in a clear and lucid manner, and as stated in the prefatory note: "The student as well as the practical physician who wishes to keep in touch with the advance which medical science has made, from the standpoint of the neurologist, is given the opportunity to get a clear conception of it by means of this atlas."

Pictorial Atlas of Skin Diseases and Syphilitic Affections, in Photolithochromes from Models in the Museum of the St. Louis Hospital, Paris, with explanatory woodcuts and text, by ERNEST BESNIER, A. FOURNIER, TENNESON, HALLOPEAU and DU CASTEL, Physicians to Hôpital St. Louis, with the Coöperation of Henri Feulard, Curator of the Museum, and the Secretary, Léon Jacquet. Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P. Part I. London: F. J. Rebman; Philadelphia: W. B. Saunders, 1895. To be published in twelve parts, at $3 a part.

The Hôpital St. Louis was founded by Henry IV and opened for patients in 1602. It is therefore next to the oldest hospital in Paris, and for the past fifty years has treated about 8,000 patients annually. The museum has been famous for its extensive dermatology and syphilography collections, and now we have these treasures spread before the world, so that all may see color reproductions of this great museum, representing cases actually treated. The plates have an explanatory text by the staff of the St. Louis Hospital, and the names of Besnier and Fournier are alone sufficient to give tone and character to the work. The translation by Dr. Pringle and the typography are worthy of all praise.

The Medical Muse, Grave and Gay. A Collection of Rhymes up to date, by the Doctor, for the Doctor, and against the Doctor. Collected and arranged by JOHN F. B. LILLARD. Cl., pp. 141. New York: I. E. Booth. 1896.

This collection has some excellent and some very poor selections, but the reader having paid his money may take his choice. We miss some of the earlier medical rhymsters such as Armstrong and Fessenden, and there is no attempt to invade the Continent and make any translations from Volkman, or from the French. We miss that characteristic poem of Dr. Holmes entitled "Rip Van Winkle, Jr., M.D.," with which he delighted the Massachusetts Medical Society some years ago, and there are many omissions of more recent American productions. However, the idea of the collection is a good one, and this book, which we hope may reach its second edition soon, is well started, although there are some that might well be spared. We expect to see the second edition twice as large. There are a number of good things in the old *Flos Medicinæ* that might

well be included in the next edition, either in the original or from some of the innumerable metrical translations, one of the best being that of Ordronaux, of Albany. Some of Dr. Holland's (Timothy Titcomb) rhymes are well worthy of being included in such a collection, and we sincerely hope that the compiler, for the credit of American medicine, may next time issue a really representative volume of medical poems, for which this too miscellaneous collection only stimulates the desire.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. WITTHAUS, A.M., M.D., and TRACY C. BECKER, A.B., LL.B., and a staff of collaborators. In four royal octavo volumes. Volume III, pp. 697. Forensic Medicine (continued). New York: William Wood & Company. 1896.

In this volume the subject of forensic medicine is continued, and the contents are as follows: 1, "Vision and Audition in their Medico-legal Relations," by J. H. Woodward, M.D.; 2, "Medico-legal Aspect of Insurance," by D. Murray, Esq., and G. J. Edwards, Esq.; 3, "Insanity in its Relations to Medical Jurisprudence," by E. D. Fisher, M.D.; 4, "Mental Unsoundness in its Legal Relations," by T. C. Becker, Esq.; 5, "Care and Custody of Incompetent Persons," by Goodwin Brown, Esq.; 6, table of cases cited in the volume.

The topics, as will be seen by the synopsis, are important to physicians in their capacity as experts, to alienists, lawyers and as well to practicing physicians. The statutory requirements of all the States of the Union are given in regard to the commitment of the insane, and to their care and custody. This volume is a worthy companion to its excellent predecessors.

The Old Virginia Doctor.

Dr. John Herbert Claiborne, an ex-president of the Medical Society of Virginia, has sent us a brochure, bearing the above title, and having for its object an embalming of the memory of the medical profession of the Old Dominion as it existed in the post-Revolutionary period. As Dr. Claiborne set his mind upon the study of medicine fully fifty years ago—he was graduated in 1849—he must have been personally cognizant of some of the survivors of the class of which he writes, and writes most feelingly. He says of the medical aspirant of those early days, that there was little chance for poor men's sons in Virginia's medical fold, the expenses of preparation were so heavy.

"The medical student had to hold the sinews of war from the inception of his career. And he was usually the scion of a house in which years of entailed wealth had given leisure, and leisure culture, and culture preëminence. He was the son of a gentleman. He was a gentleman himself: and he never forgot it. He was of kind and gracious dignity to his fellows, more kind and gracious to his inferiors, never knew any superiors, magnified his noble life, and if he ever let himself down, it was only semi-occasionally, with the old boys, of which his compeer, the old Virginia lawyer, was generally one.

"There were two of him—the old Virginia doctor: the town and the country doctor. But there was not the difference, real or supposititious, between them, as exists now between these same representatives of the same profession. The town was small, and the country large. The town doctor extended his practice far into the country, and his clientele often brought him into the circuit of his country brother. And he recognized him as a brother. Had they not both been students under the same master? Had they not been apprentices perhaps in the same surgery or shop? And had they not read the same books? And did they not both use, and equally as well, the same instruments? The former assumed no airs, and put on no pretense of superior skill, or greater wisdom than his country comrade. They met one another on the same plane of honest and sturdy fight with disease and death, and were both well and equally equipped for the contest with the common enemy,—and carried with their armamentaria a sound sense and a sagacious judgment, that shrank from no call and failed in no emergency. Nor did they divide amongst themselves the human members, and assign to separate care the eye, the nose, the head, the scrotum and umbilicus. He was no specialist, but swift as the mythologic Mercury, whose device he bore upon his staff, and strong of heart as Ajax, asking nothing but light, he went to heal and to save.

"There was only one class that did not love the old doctor—to them he was a terror, viz: the children of the family and plantation. To the white children he was the author and director of all the calomel, and rhubarb, and jalap, and oil that was given them when sick, and administered not by persuasion or promise of reward, but forced down their throats by threats of bringing in the doctor with his lancet and pullikens (tooth-forceps). To the colored children he was something worse. He was a superstition and a fetish. His physics were made of dead men's bones. Mammy had been in his shop once, and had seen a dead man—all bones—hanging up behind the door. And he carried great sharp knives, and the nurse at the 'great house' said that he had cut off Uncle Tony's leg when the mule ran away and broke it.

"But the climax came with his visit to vaccinate everybody. During the first quarter of the present century, Jenner's immortal discovery that a prior attack of cowpox rendered the human subject immune to smallpox, had just been accepted in all its import and promise. And edict followed edict, from plantation to plantation, that all should be vaccinated. That day was a field day for the old doctor. He himself had had variola by inoculation during his apprenticeship, as was the custom of the day, that he might be protected from contagion in his subsequent practice. But vaccination now was known to be equally efficacious to protect the doctor, and more desirable, as the disease itself might be spread by an inoculated patient.

"As the doctor approached the plantation the children, who had heard of his coming, fled like chickens, and had to be ferreted out from corner, and crevice, and bush, and brought back, '*vi et armis*,' with struggles and screams that made the day a memento of pandemonium. But whoever shrunk from the ordeal, the old doctor never faltered. And when he had planted his mark upon the biceps, time did not efface it. No septennial period demanded a repetition of the process. Not seven years, nor twenty-seven years, nor sixty-seven years have yet effaced it, in the few who have dodged death's javelins so long. In peace and in war, in prison and in hospital, this strong talisman has stood the test of time."

Literary Announcements.

NEW ANATOMIC ATLASES.—The Anatomic Congress held at Bâle the past year voted for a certain nomenclature, and consequently the old atlases are comparatively out of date. Vienna and Leipsic are each publishing now a handsome atlas with the official nomenclature. Both are fine works. The Vienna atlas, by Dr. Toldt, is to contain 1,000 wood engravings, and be published complete in two years. The other, by Dr. Spalteholtz, will be finished this year; it is to have 750 autotypes in colors and contain a brief description of each plate. The price of each is about the same, 30 marks.

PUBLIC HEALTH.

Typhoid Fever in Mexico.—A writer in the *Revista Médica* of Jan. 1, 1896, asserts that typhoid fever is becoming acclimated in the city of Mexico, as a few cases have occurred, all quite mild. It seems that until recently it was never encountered by physicians there.

New York State Board of Health.—At a recent meeting of the Board the subject of tuberculosis in cattle was reported upon by the special committee on tuberculosis. According to the *American Medical Review*, January, this committee is expected to report monthly on the cattle tested by tuberculin during the month, giving the number of diseased cattle found and destroyed, together with the amount of awards made to the owners of the condemned animals. The aggressive character of the newly constituted Board is further shown by the fact that the chemist of the Board, Dr. Tucker, was directed

secure a sample of the illuminating oil used by the Manhattan Elevated Railroads of New York city, for the purpose of ascertaining whether the State law requiring a 300 fire test is being complied with.

Hygiene at the University of Michigan.—The positions of professor of hygiene and dean of the literary department of that institution has been offered to Dr. Eliza M. Mosher, of Brooklyn. This position has never before been held by a woman. Dr. Mosher is a graduate from that University, of the class of 1875, and was for a time a professor of physiology and hygiene at the Vassar College. She is expected to enter upon her duties at Ann Arbor in October next.

Epidemic of Typhoid Fever Among Cavalry Officers.—Following a banquet of the officers at Rennes, France, six were attacked with typhoid fever and two died. The sickness was confined to the lieutenants, who sat at a separate table, although the menu was the same for all. They were the only ones who used champagne frappé, which gave the investigators a clue. They found that the water drained from the ice in the refrigerator into a receptacle below. The ice was obtained from the river flowing through the town into which the sewers drain. The conclusion seems inevitable that the carafes for this table must have been filled with water drained from the ice, to save the attendants the trouble of fetching pure water from the public hydrant outside of the building, and some distance away.—*Bull. Méd.*, Jan. 12, 1896.

The Dangers of "Made Lands" of Cities.—The *Medical Press and Circular*, January 15, contains a summarized report of one of the health officers of an eastern district of London, on the unsanitary conditions of houses that have been built on ash-heaps or filled-in ground.

"The medical officer of health for Hackney has once more called attention to a besetting sin of jerry-built houses. In a lately issued report he pointed out that many of the houses in his district were built upon a layer of house refuse, which in turn rested upon a bed of clay. Such a condition of affairs naturally leads to the drawing into the house of various gases of decomposition and of other components of ground air. This danger has been discussed in our own columns for many years past. That it is a common and fruitful source of disease can scarcely be doubted. In many parts of the suburbs of London it is a constant practice of the enterprising builder to fill up with ash refuse any pit that has been quarried for stone, sand, or other material. He then proceeds to run up a more or less showy villa on this green mass of miscellaneous animal, vegetable and mineral stuff. As a rule, the basement is not provided with an impermeable concrete flooring, so that the house settles, the drains are dislocated, and the inside of the house becomes permeated with poisonous ground air. The remedy is simple. No new house should be occupied until it has been duly inspected and certified as properly constructed by a competent sanitary authority. At present, the remedy which the tenant of an unhealthy dwelling has against his landlord is slow, tedious, and uncertain. The advent of some searching and practical domestic legislation would speedily put an end to the ghoulish race of jerry-builders."

Premature Occupation of New Houses; A Test for Relative Humidity of Habitable Apartments.—The sanitary writer for the European edition of the *Herald* treats of the disadvantages and dangers arising from dampness of the domicile. Regarding newly built houses he says, "Sanitarians, for the most part, teach us that a period of four months in summer and six months in winter ought to be allowed between the end of the building operations and the entrance of the inhabitants in a house. In this way will be avoided the accidents that arise from the premature occupation of an apartment. It is scarcely necessary to add that as soon as the house has begun to be occupied, to avoid dampness, it should be heated and ventilated, treated, in a word, by all the usual means to maintain a healthy condition of the apartment. If the dampness persists in spite of all these precautions, the proprietor is responsible for the defects in his building. Physicians are sometimes requested to estimate the relative dampness of an apartment or room. This is not always easy by simple inspection, as a room may be damp although saltpetre does not grow on its walls or mold in its corners. The following is an exact means of appreciation and one that is within every one's scope. In the room in question a kilogram of fresh lime should be placed after hermetically closing doors and windows. In twenty-four hours it should be weighed, and if the kilogram has absorbed more than 10 grams of water (that is, more than 1 per cent.), the room should be considered damp and classed as unhealthy. The question of the dampness of dwellings is a frequent cause of dispute between landlord and tenant, naturally solved in the affirmative by the latter, and in the negative by the former. The question can be settled in the future by the test of the hydration of lime, of which I have just spoken, and which will give irrefutable proof or refutation of the validity of such complaint. The dampness of dwellings is a cause of illness. The death rate is greater in quarters where the apartments are damp than where they are dry. Ventilation is defective where the walls are impregnated with water; the porosity of the walls is done away with and can only be reëstablished after the evaporation of the water has been completed, and the heat required to effect this evaporation is furnished by the person living in the room. This is the cause of the vivid impression of cold which we experience in damp places, and it is a well known fact that exposure to the action of cold renders the organism more accessible to the attack of morbid germs. The rotting of walls, which appears particularly in places where the water used in building contained nitrates and chlorids, is caused by changes from dryness to dampness and vice versa. It gives rise to fragmentation of the motar and even of the building stones themselves. Finally, frost can split a wall that is soaked in moisture.

"The dampness of dwellings is due to internal or external causes. There can be no doubt that a new building ought to be treated for a certain length of time by ventilation and heat with a view to evaporating the really enormous amount of water incorporated with the building materials. According to Pettenkofer, a three-story house requiring 167,000 bricks would need some 835,000 liters of water to build. When this evaporation has been effected great care should be taken in insuring proper drainage for rain and other water."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Indiana: Seymour, January 29, 1 case.
Louisiana: New Orleans, January 18 to 25, 14 cases, 2 deaths.
Michigan: Detroit, January 25 to February 1, 1 death.
West Virginia: Wheeling, year 1895, 14 cases, 2 deaths.

SMALLPOX—FOREIGN.

Dublin, January 11 to 18, 1 death.
Havana, January 16 to 23, 3 deaths.
Odessa, January 4 to 11, 12 cases, 4 deaths.
Prague, January 4 to 11, 5 cases.
Rio de Janeiro, December 21 to 28, 35 deaths.
St. Petersburg, December 28 to January 11, 21 cases, 7 deaths.
Swansea, January 11 to 18, 2 cases.
Tuxpan, January 4 to 11, 3 deaths.
Warsaw, December 28 to January 11, 5 deaths.

CHOLERA—FOREIGN.

Calcutta, December 14 to 21, 35 deaths.
St. Petersburg, December 28 to January 11, 79 cases, 43 deaths.

YELLOW FEVER—FOREIGN.

Havana, January 16 to 23, 5 cases, 2 deaths.
Rio de Janeiro, December 21 to 28, 52 deaths.
Sagua la Grande, January 11 to 18, 5 cases.

Consulate-General of the United States of America.
RIO DE JANEIRO, Dec. 31, 1895.

Sir: I have the honor to remit report for the week ended Dec. 28, 1895.

There were 26 deaths from Accesso Pernicioso, an increase of 6; 52 from yellow fever, an increase of 15; 35 from smallpox, a

decrease of 5; 5 from beriberi, an increase of 3, 3 from enteric fever, a decrease of 10; 1 from whooping cough, none in the foregoing week; none from measles, 1 in the foregoing week; and 45 from tuberculosis, a decrease of 10. From all causes there were 423 deaths, an increase of 23.

Yellow Fever. The weather is unusually hot and dry, and with it goes on yellow fever daily increasing. Unless there is some change in the weather, a bad epidemic may appear.

Smallpox. This disease is slowly decreasing, and bids fair to finish soon, but as yet it is epidemic.

Cholera. The cholera scare in Campos is about over, and no cases, not even suspected ones, have occurred here. A telegram in this morning's papers, states that one undoubted case and two suspected ones have appeared in Buenos Ayres.

Respectfully yours, R. CLEARY, M.D.
Sanitary Inspector, M. H. S.

MISCELLANY.

The "Health University" *redivivus.*—We notice the following in a Chicago paper: "Dutton Medical College, Chicago; incorporators, George Dutton, Sophia B. Dutton and Robert Green."

Correction.—In list of contributors published in the last number of the JOURNAL for preceding year: Dr. Wm. Francis Drewry's address should have been Petersburg, Va., instead of Pittsburg, Pa.

Blaze at Jefferson Medical College.—[Special telegram to the JOURNAL, Feb. 4.] During Professor Chapman's lecture, a fire broke out in the chemical laboratory, which seemed to threaten the destruction of the entire building. By the commendable coolness of the students in attendance the flames were extinguished without serious loss.

The Autophakoscopie is a small instrument by which a person can see for himself and watch the progress of the spots visible in the eye which a cataract is invading. It is described with twenty-two cuts in the *Ann. d'Ocul.*, September 1895, but has been rejected by oculists who do not approve of the patient studying the evolution of his trouble.

Suicidal Self-Medication.—The London letter of the *American Practitioner and News* for Dec. 14, 1895, says:

"At Manchester, England, an inquest has been held on the body of a hawker who, feeling unwell one day, took twenty pills. Next day he declared himself better and took eight more. The next day he died. His stomach was found red and congested as the result of his line of treatment. A verdict of death from natural causes was however returned."

Our Cuban Exchanges.—Science is supposed to raise its devotees above the cares and perplexities of life, and our esteemed Cuban exchanges are certainly a proof that this is the fact. They go calmly on their way, noting this and that "interesting case," with never an allusion to the wars and rumors of wars around them that the "special correspondents" are investing with such importance in the daily press. It is possible that if the censorship were removed, we might have a different tale.

Minnesota Provides Treatment for Inebriates.—Minnesota is one of the States which, in 1895, provided for the treatment of inebriates by counties at a reputable institute within the State, the same to be selected by a committee of three citizens appointed by the probate judge of the county. The money used for such purpose is to be treated as a loan to the individual receiving the benefits thereof, for which he shall give a non-negotiable note, payable in five years without interest, which the probate judge may, in his discretion, extend at maturity. Besides this, in chapter 155, of laws of 1895, provision is made for the examination and commitment of inebriates to the special department for the treatment of inebriates in the Rochester State hospital.

Commitment of Insane in Minnesota.—The Minnesota Legislature has, in chapter 119 of the general laws of that State for 1895, reënacted, in an amended form, a number of the sections of chapter 5 of laws of 1893, entitled, "An act to confirm the location of the Minnesota hospitals for the insane, to provide for the commitment thereto, the management and supervision thereof, and the licensing and supervision of all other hospitals for the insane. This was necessitated, for the most part, by a decision of the supreme court of the State, early in 1894, that the sections of the original statute which prescribed the course of procedure and authorized commitment of persons to hospitals for the insane, were invalid because in conflict with those provisions of the State and federal constitutions which forbid that any person shall be deprived of his life, liberty or property without due process of law. The new enactment gives the procedure prescribed a little more the character of a judicial inquiry and determination.

A New English Ambulance; the Pneumatic Tire for Ambulances.—The letter-writer from London to the *American Practitioner* thus writes of an improvement recently adopted for ambulance purposes in the city named:

"A new pattern of ambulance, called the 'Salvator,' is being adopted by many corps of the St. John's Ambulance Brigade. The most notable defects in most ambulances are the liability to downward position of the head of the patient, the screws, pins and straps liable to be lost, the fitting together of various portions, and the many things to be done at the time of emergency. In the Salvator the stretcher is simply laid on a light iron carriage, and at once the two are securely locked together. The carriage is fitted along one side with a box containing splints of various sizes, and under the head end of the carriage there is a box containing bandages, scissors, tourniquet, and other appliances. Great attention has been given to the balancing of the litter, so that perfect horizontality shall be preserved."

The use of the pneumatic and rubber-rim tires are under trial upon certain wagons, just as in this country, where they are in use in a number of our cities. A guarantee of a year's wear can be had for wheels that sell for about $100 per pair.

Medical Corps in Minnesota National Guard.—In 1895 there was a law passed providing that there shall be a medical corps in the national guard of the State of Minnesota under the direction of the surgeon-general to consist of one medical director with the rank of lieutenant colonel, three surgeons with the rank of major, and seven assistant surgeons with the rank of first lieutenant, except that an assistant surgeon who has served as such for five consecutive years, shall be eligible for promotion to the rank of captain. And in case of an increase in the number of State troops, the number of the medical corps is to be enlarged in a ratio of three medical officers to a regiment, and one medical officer for single troop of cavalry or battery of artillery. Candidates to fill vacancies in rank of first lieutenant must not be over 45 years of age, graduates of a recognized medical college, stand an examination by a board consisting of three members of the corps, and be reported by the surgeon general as fully qualified. The duties of the medical director are quite fully outlined in the statute, as are also those of medical storekeeper, which functions he may fill, or may detail some medical officer to fill. Hospital stewards shall serve as apothecaries, head nurses in hospital and assist the surgeon in keeping records of his department.

Surgery in Ruptures.—The *St. Peters. Med. Wochens.*, of Dec. 28, 1896 is almost entirely devoted to a long article on this subject by Dr. Greiffenhagen, addressed more particularly to country physicians, urging prompt and radical surgical treatment of intestinal ruptures, as modern science has deprived it of all its dangers. In the young especially, there can be no question of an operation if a temporary truss does not cause the rupture to heal of itself. The working classes also need surgical treatment to relieve them of the expenses of trusses and bandages, and whenever a patient expresses a wish for such treatment, that in itself is sufficient indication, unless there is hernia to such an extent that the abdomen is really unable to contain the intestines. Another suggests the Condamin operation for umbilical rupture; the Kocher-Salzer operation for

femoral and the Macewen for internal inguinal rupture. In the treatment of external inguinal, another prefers Kocher's to begin with, but concludes with either Macewen's, Frank's or Bassini's. His historic account of the treatment of rupture from the days of antiquity to our own is very interesting, and he asserts that we will not be far wrong in assuming that one of every thirty or forty throughout the world, is ruptured more or less.

Professor Albert.—We are glad to learn from the *Klin. Rundschau*, of Vienna, that Professor Albert has recovered from the attack of gout which prostrated him during the Christmas holidays. He has decided to restrict himself to the charge of his clinic this winter, and not attempt to lecture. His amphitheater is undoubtedly one of the worst in existence and his health would certainly suffer if he were to lecture where the thermometer is often as low as 7 degrees C. Professor Hochenegg is suggested as lecturer in his place.

The "Mother's Friend" and the Infant's Murderer.—The enormous consumption of opiates among the poorer class of English cities crops out from time to time, and we give below an item from the *Press and Circular* that shows that even grocers are heavily engaged in selling the infant-killing narcotics. "The extent of the trade in infant hypnotics may be judged from the evidence presented in a recent prosecution by the Pharmaceutical Society of England against a grocer for selling one of these nostrums. This concoction, which is called the 'Mother's True Friend,' was a mixture of Epsom salts and morphia, to the amount of one grain of the latter to the ounce of water. The defendant pleaded that he had sold two gallons a week of the liquid for the last twelve years, but he admitted that for the privilege of doing so, he had paid already £25 as fines to the Pharmaceutical Society upon five separate convictions. He was fined another £5."

The Modern Arabian Medical Practice.—If the following be a true description of the modern Arabian school of medicine in Northern Africa, what must have been the measure of the harshness of that school in the earlier times? In the course of his description of life in Morocco, in "The Church at Home and Abroad," Rev. James Johnston thus describes the course of treatment adopted by the Moorish physician:

"For a woman to be ill in Morocco is a misfortune indeed. If in a state of suffering, the Moorish woman is allowed, infrequently, to go to the native doctor, who is seated in the marketplace, surrounded by the implements of his calling. An array of flat irons, a small firepot of charcoal, and a huge black bottle constitute his stock in trade. Whatever the disease, external or internal, there is invariably one remedy. He places the iron in the fire until it is hot, and then applies it to the part affected, after which the patient must swallow a draught of a mysterious potion. What this barbarous ordeal entails may be more easily imagined than described. To the rescue of their suffering sisters from such misery, an increasing band of qualified lady physicians are devoting themselves, and they are welcomed where the male medical missionary is refused admission."

Hemicrania or Migraine not a Local Trouble.—Bary adopts Moebius' theory that migraine is a general morbid condition and not necessarily a local trouble, and consequently asserts that the pain can present itself in other parts of the body as well as the head. (*Neurol. Centralbl.*, No. 6.) He cited in confirmation of his assertion the case of a woman belonging to a family in which serious nervous troubles were hereditary. She was subject to excessively painful migraines. Occasionally the pain in the head would stop abruptly, but would be immediately superseded by a severe pain in the epigastric region. The gastro-intestinal functions showed no disturbance but were perfectly regular through these paroxysms. There was no hysteria, no neurasthenia.—*Bulletin Méd.*, Jan. 12, 1896.

Treatment of Hydrocele with Injection of Concentrated Carbolic Acid. The *Centralbl. f. Chir.*, Jan. 4, 1896, gives an account of the results of this treatment in Professor Bruns' clinic. Of forty-seven cases treated, twenty-eight were cured with sac injection; four with two, and two with a simple puncture a few weeks after the injection. In the six cases that were not healed, the trouble was so slight with four when it reappeared as not to necessitate treatment. There never were any symptoms of intoxication in any of the cases. Professor Bach writes to the *Klin. Chir.* in regard to the above and compares this treatment with the results obtained from iodin. The advantages are about even, he concludes with this in favor of carbolic acid, that it is painless and does not require any interruption of the usual occupations. A Russian clinic, Rasumowski's, of Kasan, has also had considerable success with carbolic acid as described in another article in same number. A saturated alcoholic solution of carbolic acid was used in this case.

A Curious Mistake; "Tyson's Glands."—Dr. James Tyson, of Philadelphia, writes to the *New York Medical Journal*, January 4, for the purpose of disclaiming a discovery erroneously accorded to him by a fellow-countryman of the real discoverer. It appears that in a paper by Dr. Finlayson on Eponymic Structures, in the *Glasgow Medical Journal*, December, occurs the following: "Tyson, James T., American professor of pathology, physiology and microscopic anatomy. Born at Philadelphia, 1841. Glands of (prepuce and labia)." The letter of our American Dr. Tyson says: "As I am evidently intended in this reference, I think I should state that I am not so fortunate as to have discovered these glands. They were described probably over two hundred years ago by Edward Tyson, M.D., Fellow of the College of Physicians and the Royal Society, Physician to the Hospital of Bethlehem, and reader of anatomy at Chirurgeon's Hall, who was born in 1649 and died in 1708." Another curious error in names recently perpetrated in one of our New York contemporaries is the reference to Sir Richard Quain, of London, as "Sir Richard Quinn."

The Manhattan State Hospital for the Insane.—The Governor of New York State is required by law to make, early in February, appointments to the Board of Managers of the above named institution, which is the new name of that notorious public retreat, the New York City Asylum. The act under which the transfer of this abode of neglect and mismanagement was transferred to "State care" was approved on January 28. The New York *Herald* says: "The new board is to consist of seven persons, two of whom shall be women, and all shall be residents of the city of New York. They shall hold office for one, two, three, four, five, six and seven years. It has been expected that under the new regime of the State Lunacy Commission the old management of the asylums and the abuses which went on under the eye of the general superintendent, Dr. A. E. Macdonald, would be discontinued, but there is some likelihood that the old management will be quite as much in favor with the Lunacy Commissioners as it was with Tammany Hall."

Pathological Department of the New York State Commission in Lunacy.—An appointment by the above named commission has been made to the position of Director of the Pathological Institute of the State Hospitals for the Insane, after a competitive examination in accordance with the civil service laws of the State. This new position has been established under an act passed by the legislature of last year. Dr. Ira Van Gieson, of New York city, has passed the required examination in general pathologic anatomy, architecture of the nervous system, minute anatomy of the nervous system, pathologic anatomy of the nervous system, technique and methods of neural investigation and the lines of research to be applied to study of the pathology of insanity. Dr. Van Gieson has been connected with the laboratory of the College of Physicians and Surgeons, New York, for ten years past as instructor in normal histology and neurology, and is regarded as an authority on microscopic technique and the pathology of the brain and nervous system. His

selection was highly indorsed by many prominent members of the medical profession. The laboratory, which is to be maintained for the benefit of all the State hospitals, will be conducted on a scale which has not hitherto been undertaken by any State or country, the aim of the commission being to provide for an exhaustive study of all the morbid conditions that underlie mental diseases, from the standpoint of cellular biology, which is now elevated to the dignity of a special science; also to provide instruction in brain pathology and allied subjects for the medical offices of State hospitals. Official bulletins representing the progress of the laboratory work and the clinical work of the State hospitals will be issued quarterly.

Amendment of Tennessee Pharmacy Law.—Chapter 39 of the Acts of Tennessee of 1893, establishing a board of pharmacy, and regulating the practice of pharmacy, the sale of poisons, and prohibiting the adulteration of drugs, was amended in 1895, making the provisions thereof apply only to incorporate cities and towns, and taxing districts of the State, and providing that all persons brought within the provisions of the law, by these amendments, shall be entitled to registration without examination, on the same conditions as provided by the original act. Section 3 is amended by adding thereto that it shall be the duty of every registered pharmacist, or assistant pharmacist, upon changing his place of business from one town to another, or upon leaving the State, forthwith to notify by letter the secretary of the board of pharmacy of such change in location. It shall also be the duty of every registered pharmacist, or assistant pharmacist, to notify by letter the said secretary on or before the 30th day of June in each year, whether he or she will continue the practice of pharmacy at registered place of business. The secretary of the board shall notify by letter, to the address as appearing on his books, every registered pharmacist, or assistant pharmacist, who shall not have notified him as thus provided, that renewal of registration is required, and in case an answer enclosing the necessary fees shall not have been received by the secretary within thirty days from the date of such notice, such name shall be stricken from the register.

Statistics of Serotherapy in Diphtheria in Germany.—Prof. Behring delivered a recent address on this subject in which for the first time, he replied to the swarms of critics who have been attacking him the past year or so. He maintained that statistics prove the efficacy of his serum, and that the 60,000 deaths from diphtheria which the empire has averaged each year will be found to be reduced to 40,000, and a more general use of the serum would reduce this to one-third. Throughout the city of Berlin the fatality in diphtheria amounted to 30 per cent., but in the Contagious Hospital, where serum was promptly used, the mortality was only 20 per cent. In the same time in 1895, it was only 10.3 per cent. The mortality in the hospitals had always been much greater than outside heretofore. Last year the percentage of mortality in diphtheria cases in Berlin fell to 15 per cent. During this period the disease was not a mild form, but averaged more morbid symptoms than at any time since 1886. During the first three months of 1894, when the serum was not to be had, there were 363 deaths per 1,000, while the last three months, when everybody could get the serum, there were 198 deaths per 1,000. Summing up the figures, there were 10,312 diphtheria cases reported; 5,833 treated with serum, with a mortality of 9.6 per cent. In 4,479 cases it was not used, and the mortality was 14.7 per cent.

Use of the Blood of the Viper and Common Adder as an Antivenomous Substance.—According to the *Medical Week*, Drs. Phisalix and Bertrand have addressed the French Academy of Sciences on the above subject. In their preceding papers they have shown that the blood of the viper and common adder contains toxic principles analogous to those of venom. The immunity of these animals to their own venom they regard as the result of habituation. They have since carried out further experiments, the results of which suggest the possibility of another explanation. Having found that the natural immunity to adder poison enjoyed by the hedge-hog is due to the simultaneous existence in the blood of this animal of toxic and antitoxic substances, they have endeavored to ascertain whether the same is not true of the blood of the viper also. With this object in view, they subjected viper serum to a temperature of 58 degrees C. during fifteen minutes, and then injected it into the peritoneum of several guinea-pigs. Half a cubic centimeter of normal viper serum is sufficient to kill a guinea-pig, but several cubic centimeters of the heated serum determined no ill effect of any kind, which proves that the toxic substances normally contained in the serum had been destroyed. Dr. Calmette has already called attention to the fact that the blood of the naja tripudians, naja haje, rattlesnake and horned viper loses its toxic properties when heated for ten minutes at a temperature of 68 degrees C. Moreover, injection of heated serum immunizes the animal against the poison, as they have ascertained beyond question by experiment. The antitoxic power of this heated serum is considerable, for on several occasions an injection of a quarter of a cubic centimeter proved sufficient to immunize a guinea-pig against the lethal dose of poison; but this immunity was of short duration, passing off within a few days. Similar experiments with the blood of the common adder gave the same results, except that the antitoxic power in this case was somewhat inferior to that of viper's blood. In the viper and common adder therefore, as in animals which have been artificially vaccinated or immunized, antitoxic substances are produced by a defensive act of the organism, and it is possible that the immunity of these reptiles to their own venom is the result of auto-vaccination, as it were, rather than habituation. In any event, the existence in the blood of the viper and common adder of antivenomous substances is a point of great importance in respect of general physiology, because it proves that, in proportion as the cells of an organism secrete toxin an antagonistic reaction takes place, which results in the formation of a specific antitoxin.

Association of American Medical Colleges. Important Decision.

OHIO MEDICAL UNIVERSITY.
COLUMBUS, OHIO, Dec. 22, 1895.

DR. BAYARD HOLMES, Sec'y Ass'n American Medical Colleges, Chicago, Illinois.

Dear Doctor:—In my duties as Dean of Medical Department Ohio Medical Udiversity, several questions have arisen from time to time on which I have not been able to find rulings in proceedings or constitution of the Association. In some of these cases prospective students may have interests at stake which in deserving cases I might not desire to ignore without first giving their cases careful consideration. In others the University would not desire to grant any concessions, no matter what personal merit there was in the case, without a certainty that they were permissible under the rules of the Association.

In view of these knotty problems I have desired to get opinions on questions that may arise again. Our sessions run from the middle of September until the latter part of May, being divided into fall, winter and supplementary terms. Attendance on the latter term is not a requirement of the regular annual session, and commencement exercises are held at the close of the winter term in March. The work of the supplementary term is carried on by our regular faculty, and if a student matriculates for it he is required to carry a full quota of work, and in clinical studies he has unusually good advantages.

Under our plan of teaching (grading from daily recitations) record of non-attendance is complete. It has been our rule that sickness or other satisfactory cause can not excuse from more than 20 per cent. of session. In deserving cases, students of undoubted scholarship and work, the question arises, can "conditions of time"—*i.e.*, lack of the required 80 per cent. attendance of regular session, be removed by attendance upon this supplementary term, provided that their scholarship comes up in every way to the usual standards? In other words, can a man whose deficiency is one or two weeks time alone,

overcome this by two months in the supplementary term, or must he be held over for the regular required session of the following year?

We have a senior student who has been sick for eight weeks this fall with typhoid fever, and during this time was under the care of our staff in the University Hospital, and he raises the question whether, if his scholarship is proven worthy, he can not remove the limitations of lost time by two months in the supplementary term and be given his diploma at the end of that time.

Another question. A. is a student in the literary department of an institution and in January transfers to the medical department of the same school and, in July receives credit for first year's work, he having been in this school some two or three years and received the degree of B.S. Is such a student eligible to second year of a regular winter session college the September following, on passing examinations in the first year branches? A literal construction of the rule that no two courses shall be in the same twelvemonth leaves room for discussion as to its application in such a case.

We have a student who for sufficient reasons desired to take his course at the Ohio Medical University and applied a year ago this fall for admission to our junior class. He had in July completed his first course, but had been a student as stated above, possessed the B.S. degree. We declined to matriculate him as a candidate for the degree at the end of two sessions, and of his own election he agreed to enter and take the work, and allow the question of his eligibility for degree to come up later. That question has now arisen. He attended the regular session last year, including the supplementary term. He has been in the office of one of our busiest practitioners. His scholarship is unexcelled in the University, and in every way he has shown himself to be a capable man. This year he was chosen from a large class as assistant to hospital staff. Can he in accordance with the laws of the Association, be given the degree of M.D. at the close of the required session in March?

I regret to trouble you, but you will be able to give answers more briefly than I have been able to put the queries. Thanking you for your kindness, Very truly yours,

[Signed] J. E. Brown, Dean.

ANSWER.

1. No student, present or prospective, can have any legitimate interest sufficient to require any college to violate the provisions of Sec. 5, Art. III, of the Constitution. The meaning of the word "sessions" as used in the second line of the second paragraph of the letter to which this is an answer, is ambiguous. If they "run from the middle of September until the latter part of May" the object of dividing into "Fall, Winter and Supplementary terms" is not apparent to the Council. Such subdivisions of annual courses must be regarded as irregular.

2. No other instruction, excepting that given under the regular annual courses, can be accepted as any part of the graded instruction provided for in Sec. 5, Art. III, of the Constitution.

It is assumed that a student of medicine continuously pursues the study from the beginning to the conclusion of his collegiate career. The work of any supplementary term can be regarded as additional facilities offered by the college conducting it, and it might be construed in the light of increased advantage to its students.

There is no rule of the Association which recognizes "grading from daily recitations." Intermediate examinations are provided for at the end of any regular session. Entrance examinations for advanced standing must be conducted at the beginning of the regular sessions. Intermediate studies can not be recognized as fulfilling the requirements of any portion of the annual courses provided for in the Constitution, as at first adopted, nor as amended to take effect in 1899 and thereafter.

A certain degree of discretion must be exercised by the Deans of colleges, but it can not be allowed that any college may, with impunity, disregard any of the provisions of the Constitution of the Association.

3. The time requirements of the Association are fundamental, and no amount of sickness can be accepted as an excuse for absence from college duties. It is the student's misfortune if ill health interrupt his studies; and, if he may be excused from two months of the six required for one annual course, he may be excused from an equal period in each of the succeeding years. The purpose of the time requirement, in connection with the graded system, is to secure a certain standard of scholarship, which would be impossible for those physically unable to pursue the course of study.

4. The requirements of Sec. 5, Art. III, of the Constitution would be violated by permitting the student to receive credit for a second annual course of instruction beginning at any time of the same year in which his first course had begun. A student, therefore, beginning his collegiate training in an institution whose annual sessions begin in January can not be permitted to enter, the following September, an institution whose annual session begins at that time, or prior to the month of January. Colleges whose annual sessions begin in September can not receive a student in January, and give him credit for a full course of instruction terminating at any time prior to the end of the next ensuing session after the January admission.

5. The student referred to as having attended "the regular session last year," and, as having "been in the office of one of the busiest practitioners" can not be admitted to final examination for the degree until he has completed three courses of six months each, in three separate years, prior to 1899.

[Signed.] Dudley S. Reynolds, M.D.
Starling Loving, M.D.
Victor C. Vaughan, M.D.
Julian J. Chisolm, M.D.
Albert R. Baker, M.D.
J. H. Etheridge, M.D.

International Medico-Military Statistics.—Dr. Myrdacz, Secretary of the International Committee on Uniformity of Medico-military Statistics of which Lieut.-Colonel John S. Billings, U. S. A., is chairman, has issued to the various governments a review of the state of the negotiations of the Committee to date. The statistical tables presented by the Committee for adoption are ten in number: I, report of examination of recruits; II and III, movements of sick by departments; IV, by corps of service and months; V, by larger garrisons and VI and VII, by important diseases; VIII, admissions of important diseases by corps and IX, by months; X, deaths according to years of service and age.

France declared Feb. 24, 1895, that her statistics would be changed to correspond with the plan proposed by the Committee, with the exception of her recruitment, which will not be included in her statement. No further communications were received since that date.

Russia forwarded May 18, 1895, complete tables, agreeing very nearly with the Austria-Hungarian plan. The headings are in the Russian and French languages. Deviations from the plan consist in the following points:

1. The Sanitary Corps does not exist in Russia as a separate body, but is comprised in the "Troupes auxiliares."

2. In table VII the position for "Days lost by Sickness" has been omitted.

3. In table VI the same omission is made.

4. Table I is arranged by "Gouvernements," and as the recruitment is a part of the duties belonging to the Department of Interior, it follows that this table has first to be constructed by the medical branch of the War Department.

The United States of America will annually forward hektographed tables to the Chief of the foreign Medical Departments, and expect an equal courtesy on the part of Austria-Hungary. As in America, the losses by "Disability," are considerably in excess of those by "Disease," the desire is expressed that in tables II, III, IV, VI and VII the losses by "Disability" should be stated separately. Table VIII brings the absolute figures. [The International statistical Tables for the calendar year 1894, were published in the last annual report of the Surgeon General of the army.—J. B. H.]

Austria-Hungary has adopted the blank forms submitted by the Secretary of the Committee. It is proposed to conform to them in the publication of the sanitary statistics for the year 1894.

England forwarded Feb. 22, 1895, complete blank forms, which differ from those of the Austria-Hungary plan in the following points:

1. Positions 5–15 are not expressed in centimeters, but in feet and inches.

2. Position 18 is headed "Defective Vision," and position 19 "Heart Diseases," while the original table proposed respectively, "Myopia" and "Defective Heart" (vitium cordis organicum).

3. On tables II and III position "Treated in Quarters" is omitted, and the position for "Loss other than by Death" is subdivided into the positions "Sent Home" and "Discharged." The position "Days lost by Sickness," is substituted by "Constantly non-efficient from Sickness."

4. In table IV the number of patients treated in quarters is

omitted, and position for "Constantly Sick" is newly supplied.

5. Table V is omitted.

6. On table VI and VII the patients returned to duty are not given, and the "Days lost by Sickness" are substituted by the column "Average constantly Sick."

6. Tables VIII and IX are omitted.

BAVARIA, by a communication dated Jan. 26, 1895, has fully adopted the Austria-Hungarian plan, but desired that the position headed "Otherwise Disposed of" be subdivided into "Invalids" and "Unfit for Service."

DENMARK referring to the Austria-Hungarian plan, forwards May 26, 1895 the following remarks:

1. In table I conscripts of not less than 21 years of age are mentioned, while in Denmark conscripts from 18–20 years old are brought before the examining board. It is asked whether rejection for being "Under Height" are in all cases definite or only temporary. Positions 5–10 should contain not only those fit for service, but all who have been under treatment. The diagnosis "Physical Debility" should, by remarks, be clearly defined.

2. In reference table VI the question is asked how to count a patient who is first admitted to quarters, and afterwards for the same disease to hospital. In regard to tables II–IX, information is desired how to tabulate patients treated on account of attempted suicide or accidents, and who subsequently die.

As in Denmark only patients are treated in quarters whose complaints are of the most trivial character, which hardly warrant diagnosis, the reports will include none but hospital patients.

PRUSSIA has not yet forwarded her decision in regard to her adoption of the plan.

BELGIUM has not yet communicated her decision.

ITALY accepts the Austria-Hungarian plan with the following remarks:

1. It will be impossible to entirely conform to the plan prior to 1897. In the reports for 1895–1896 the tables will be partially used, as has already been done in the report for 1894, recently published.

2. An abundant and regular exchange of the completed tables is desired.

3. In table I the classification will be given by military divisions.

4. In tables II and III a column should be interpolated next to that headed "Deaths," giving the deaths occurring outside of sanitary establishments.

5. In addition to the Division Headquarters, only garrisons with a minimum strength of 1,000 will be given.

6. In tables VI and VII "Pleuritis" and "Ulcus molle" (Chancroid?) should be inserted.

7. In table X ratios instead of absolute numbers should be stated, and an additional column is required for deaths of soldiers under 20 years of age.

8. It would be desirable to have an understanding in regard to the manner of computing the mean strengths. In Italy the sum of the daily rations due to men actually with their colors, to those treated in sanitary establishments, and to those furloughed (less than three months) are, at the end of the year, divided by 365. Is the same practice observed in other armies?

9. The questions are asked whether the cases of men dying in sanitary establishments, after having been discharged from the army, are to be considered as deaths, or simply discharges? If a man, when under treatment, contracts a disease of an entirely different kind from that for which he was originally admitted, would his case constitute one or two admissions? If a man dies after a shorter or longer absence from his colors, should his case be included in the statistical report?

The following communications were received from governments not represented at the Committee meeting at Buda-Pesth:

NORWAY has appointed Capt. Dr. Trap Jensen, of Christiana, as her representative on the Committee, but will furnish no other data than that in regard to recruitment, a regular army as such having no existence.

SPAIN appointed as her representative on the Committee, Dr. Joseph Reig Gasco, of Madrid, who is attached to the military household of the Queen Regent.

HOLLAND will adopt the appendix to the Austria-Hungarian plan for her report of 1895. The following exceptions are taken:

1. Column "Otherwise Disposed of" should be subdivided into two columns headed respectively, (a) "Unfit for Service," and (b) "Otherwise Disposed of."

2. In tables VI and VII under "Gonorrhea" and "Syphilis" the original admissions only should be tabulated, omitting relapses and chronic cases.

3. Headings of tables and other writings should be in the Latin or French language, or one of these languages should be employed to translate the terms used by the different nations.

4. A short description of the prevailing system of recruiting should be added, and the requirements for acceptance stated.

Health Officer of the 1st Class, W. H. L. Borgershoff, in charge of the military hospital at Middleburg, was appointed as representative on the Committee.

Practical Notes.

Sulphur as a Cure for Acne and Facial Eruptions. Dr. Barrière, of Paris, has cured many cases of this nature that refused to yield to other measures. He used it alone or combined with general treatment. Its advantages are obvious and its efficacy is thoroughly established.—*Rev. Int. de Méd. et de Chir.*, Jan. 10, 1896.

The Kastorsky "Cure" for Diphtheria.—This cure is a 10 per cent. alcoholic solution of menthol, with which the fauces are sponged off. It is applied on a piece of cotton. Thirty-seven cases treated were cured, some with one application. Several cases also were treated where the diphtheritic angina was complicated with scarlatina.—New York Correspondence *Revista de Ciencas Med.*, Jan. 5, 1896.

Leucoma.—Dr. Germann noticed the peculiar triangle produced by a steel pen dipped in ink, with which one schoolboy had struck another in the cornea, and he has applied this observation in tattooing for leucoma with highly satisfactory results. Instead of the usual pointed lancing pencil he used one that produced a triangular mark, and accomplished the operation in less than a quarter of the usual time.—*St. Petersburg Med. Woch.*, Dec. 28, 1895.

Actinomycosis in the Lungs.—Heusser describes a case of this kind in the *Berl. klin. Wochensch.* which baffled diagnosis for a long while, the symptoms being typically characteristic of pleurisy, and later of tuberculosis, until the fungus actinomyces was found in the sputa. It shows the necessity of being a bacteriologist in order to diagnose successfully nowadays.—*Gaz. Méd. de Paris*, Jan. 11, 1896.

Preliminary Exploratory Operation.—Prof. Tansini, of Palermo, recently performed an exploratory operation for the purpose of diagnosing a renal trouble, which the *Gazzetta degli Ospedale e Cliniche*, of Jan. 11, 1896, commends as an innovation worthy of note. Instead of operating upon the diseased kidney he opened up the other one, thus learning the condition of the capsule, etc. Finding everything sound he sewed up the opening entirely, taking stitches in the capsule, the muscular tissue and the skin. Then he proceeded to perform nephrectomy with confidence, and the patient was soon restored to perfect health.

Intravenous Injection in Post-operative Sepsis.—Dr. Berlin, of Nice, recently had a case of violent septicemia following a vaginal hysterectomy, that showed the fatal symptoms of dyspnea, subnormal temperature, inflated and painful abdomen, etc. When death seemed imminent Dr. Berlin injected 600 g. of Hayem's artificial serum into the patient's veins, and followed it with 800 g. At first all symptoms grew worse and cyanosis soon followed, and twelve days after operation patient was discharged cured. (Case reported to the Soc. de Chir., and described in the Paris letter to the *Therapeutische Wochenschrift*, of Jan. 12, 1896.)

Cystic Formations at the End of the Optic Nerve.—Sachsalber describes, in the *Beiträge zur Augenheilkunde*, a case where small cysts formed at the level of the papilla of the optic nerve, situated below the vessels of the retina, resembling small knobs in appearance. The patient died of an intercurrent disease and the autopsy showed that these cysts were produced by a hyaline transformation occurring in the nerve cells, forming actual hyaline concretions. The absorption of these concretions produced the cysts. The walls of the vessels of the papilla showed also the results of a thickening process.—*Gazette Médicale de Paris*, Jan. 11, 1896.

Treatment of Night Sweats in Phthisis.—

R. Salicylic Acid . . . . . 2 grams.
Distilled water . . . . . 10 "
Alcohol . . . . . 6 "
Neutral glycerin . . . . . 4 "

This mixture is for subcutaneous injections. Inject before retiring 2 cubic centimeters for four or five days.—*Jour. de Méd. de Paris*, Jan. 12, 1896.

Cancer of the Supra-renal Capsule.—Stonkoventoff recently described a case of this kind that is worthy of note in some respects. The patient was a woman of 50 who began to have a cough, fever and intense pains in November, 1894. Lungs seemed affected, liver hypertrophied to some extent, and finally she died with every symptom of pulmonary trouble. The autopsy showed the origin of all this functional disturbance to have been a cancerous growth on the supra-renal capsule, which displaced the liver somewhat, but had not affected the kidney.—*Gaz. degli Osp. é Chir.*, Dec. 28, 1895.

Insufflating the Bowels with Boracic Acid.—Merkel, of Munich, has been treating some cases lately where gases have accumulated in the bowels, producing great discomfort, accompanied with constipation, according to Flatau's suggestion of insufflating the intestines with boracic acid. He has been successful, and although relapses occurred in several cases, they soon yielded to a permanent cure. He used each time 2 to 4 gms. boracic acid with which the intestines were insufflated as high as possible by means of a rubber tube and ball. The process was repeated two to six times a week for some time.—*Münchener Med. Wochenschrift*, 1895, No. 52.

The Disinfection of Tuberculous Sputa with Wood Vinegar.—As it is impossible in private life to use the methods of disinfection practiced on such a large scale in hospitals, and as it is important to have these germs killed, Dr. Goriansky has been conducting a series of experiments at St. Petersburg, the result which he announces is the discovery that wood vinegar, or pyroligneous acid, will kill that almost indestructible Koch bacillus, as it is found in sputa. Wood vinegar, we know, contains guaiacum, cresols and acetic acid. It probably owes much of its intense antiseptic action to the fact that the guaiacum is found in it in an acid solution, and also to the acetic acid it contains in considerable quantities.

Kobert's Cornutin.—This remedy has not proved reliable in a number of cases in Vienna (*Wien. klin. Wochens.*, Nos. 22 and 23, 1895), where it was used to control uterine hemorrhages due to atony of the muscles after confinement, and in other gynecologic troubles. In two cases where the desired result was finally obtained it was only temporary and the uterus soon relaxed again. The effect of ergotin is persistent, and in every way it is superior to cornutin. Some fowls experimented on with cornutin to ascertain its hemostatic value proved the superiority of freshly prepared ergot. No experiments were made with it in regard to producing labor.—*Les Nouv. Remèdes*, Jan. 8, 1896.

Puerperal Multiple Neuritis.—The *Lyon Méd.*, No. 51, reports a case of multiple neuritis accompanying childbirth. The first symptoms showed themselves during the last month of pregnancy, accompanied with frequent vomiting. There were pains, burning and tingling sensations in the limbs, which became very weak and emaciated, and after birth of child these symptoms increased, until the lower limbs became absolutely impotent, the arms relatively so. It required three months' treatment with hypodermic injections of ergotin, and electric baths for the lower limbs only, to restore them to health. The action of the bladder and rectum remained normal through it all. The cause did not seem to be any auto-infection, but rather the debility of patient, which affected her like marasmus or chlorosis, which are often complicated with multiple neuritis.—*Bull. Méd.*, Jan. 12, 1896.

Intestinal Antisepsis.—M. Huchard's paper delivered before the Société de Thérapie last month is an eloquent plea for the rational use of intestinal disinfecting washings. He has secured some magnificent results from them in cases of chlorosis and uremia, which he has completely cured in this way. He defines uremia, with Bouchard, as an intoxication of the system produced by the various poisons introduced into the system which the kidneys fail to eliminate. He introduced two liters of salted water at 40 degrees C. into the rectum, plugging the anus with cotton around the tube. With three liters the liquid floods the intestines almost the entire length, and six liters will penetrate even into the stomach, from which it has been withdrawn through the mouth, thus entirely reversing the order of nature, which is not to be commended. He predicts a great future for this safe, easy and reliable medication as its true value becomes better recognized.—*Rev. Int. de Méd. et de Chir.*, Jan. 10, 1896.

Lannelongue's method Applied to Vascular Tumor Invading Neck Face, Mouth and Tongue.—The *Bull. Méd.*, Jan. 12, 1896, describes the cure of a tumor of this kind on a woman of 28, following the course of the lower maxillary, and probably congenital, as patient could not remember when she did not have a bunch there. It was a soft, pulsating, vascular tumor, such as Dupuytren calls an arterial varix, and no operation was to be thought of, except as a last resort, ligature of the carotid. The pain and inconvenience of this immense excrescence were most distressing. Prof. Lannelongue used his sclerogenous treatment, viz., injections of 10 per cent. solution of chlorid of zinc, three or four drops at each puncture, injected in the surrounding tissues and in the tumor itself. Immediate relief ensued, and four sittings reduced the tumor to such an extent that no more were attempted. At present, three years have elapsed and the angioma has dwindled to size of a small nut, while a slow atrophic sclerosis has taken place throughout it, the surest sign of a permanent cure. (See this JOURNAL, Jan. 18, page 136.)

Castration to Relieve Hypertrophy of the Prostate Gland.—The last two numbers of the *Centralbl. für Chir.*, Jan. 4 and 11, 1896, contain each an account of a successful operation of this kind. One by Professor Bruns freed the patient from the catheter he had been compelled to use for six months. Professor Taisst writes to the *Klin. Chir.* in regard to this case, reviewing all the literature on the subject, and heartily endorsing double castration as the last and safest means of relief. He asserts that the disturbances of the psychic functions observed in some cases after castration, were due to previous causes, and not to the operation itself. The second case was treated by Dr. Roosing, of Copenhagen. A man of 85 had, for eleven years, never had one spontaneous discharge of urine, but had been compelled to use a catheter constantly. Operation became necessary as even smallest sized catheter caused pains and bleeding, and patient was wasting away from this and other complications. Two months after double castration patient was well and strong, with normal and natural urinations; the elasticity of the bladder almost completely recovered, and general health and spirits were restored in a remarkable degree.

Fatal Effects of Iodid of Potassium in a Case of Goitre.—A communication was read at the session of the Société de Thérapie, November 13, relating the death of a man who was being treated for a very large goitre, with four grams of iodid of potassium internally during the twenty-four hours, and an iodized ointment applied to the thyroideal region externally. The treatment relieved the patient materially, as in three weeks the goitre had sensibly decreased in size. But very soon after treatment commenced, besides the usual symptoms of rebellion against the medicine, there was repeated vomiting, tachycardia and trembling. The iodid was discontinued, but

the toxic symptoms persisted and grew worse until the patient died, a month from the time treatment began, with symptoms of strumipriva cachexia and exophthalmic goitre. The physician in charge attributes death of patient to the rapid atrophy of thyroideal substance, produced by the iodid. This and the experience of others testify that although iodid is of great efficacy in the treatment of goitre, yet those suffering from it are least able to stand it, on account of its effect in provoking changes in the glandular organs, as Reser and Lebert have shown.—*Rev. Int. de Méd. et de Chir.*, Jan. 10, 1896.

Asepsis in the Use of Catheters.—The *Przeglad Chir.* contains an article on the sterilization of bougies and catheters which the ordinary methods, dipping in antiseptic solutions, washing with hot suds, and even the use of sublimate, sulphuric acid and vapor from quicksilver, are far from accomplishing thoroughly. Some microörganisms are sure to be left in the instrument. Perfect sterilization can only be secured by exposing for an hour to air heated to 130 degrees C., or to a flow of steam for fifteen minutes. The author then describes an apparatus he has invented for this steaming process, and also commends highly Kutner's. Boiling water can be used for metal and Nélaton catheters. But soda or any irrritating substance must not be added to the water, for fear some particle may lodge and inflame the membrane. The organs should be carefully bathed externally with sublimate, and the surrounding region. Nothing should be left undone to secure asepsis of the urinary passages, which is the most difficult part of the task, especially when there is inflammation, retention of the urine or hyperemia and lesion of the mucous membrane of the bladder. In injecting the sterilizing water care should be taken to keep the orifice open so that the liquid can run out again and not force its way into the bladder. Sterilized vaselin the author recommends to use on instruments. The catheter should be used every six hours in cases of retention, until it has completely passed away. This he considers a very important point.—*Centralbl. für Chir.*, Jan. 4, 1896.

Society Notes.

THE RUSSELL COUNTY MEDICAL SOCIETY held a regular meeting in Montgomery, Ala., January 22. The following officers were elected for the ensuing year: President, T. A. Johnson, Jernigan; Vice-President, W. B. Hendrick, Hurtsboro; Secretary and Treasurer, G. F. Hendrick, Crawford.——The Ramsey County, Minn., Medical Society held its annual meeting in St. Paul, January 27. The following officers were elected for the ensuing year: President, A. J. Gillette; Vice-President, G. E. Senkler; Secretary, C. R. Ball; Treasurer, O. S. Pine.——The monthly meeting of the Binghamton, N. Y., Academy of Medicine was held Jannary 21.——At the annual meeting of the Denver and Arapahoe Medical Society the following officers were elected: President, Robert Levy; Vice-President, Edward Jackson; Secretary, S. D. Hopkins; Financial Secretary, F. P. Hershey; Treasurer, E. J. Rothwell.

Hospital Notes.

THE ANNUAL meeting of the Salem, Mass., Hospital Corporation was held January 22. The report shows 1,677 patients treated in all departments.——The Brooklyn, N. Y., Israelite Hospital Association has plans under consideration for a new hospital for the Jews in the Eastern District. It has been resolved to locate the hospital in Queens County, near the city line of Brooklyn, and that the total running expenses shall not exceed $490 a month. There are to be twenty-five beds in the building, and the privileges of the hospital will be extended to all, regardless of nationality or religion.——A meeting was held in Indianapolis, January 22, to discuss the establishment of a State hospital with free and pay wards. A committee on organization was appointed.——The sixth annual report of the Long Island Throat Hospital and Eye Infirmary shows that 4,909 patients were treated during the past year.——At the annual meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital, the following officers were elected for the ensuing year: President, D. B. St. John Roosa; Vice-President, Andrew H. Smith; Treasurer, Bache Emmet; Secretary, J. L. Skillin.——The new hospital presented to the city of Carlisle, Pa., by the widow of the late ex-Congressman, Lemuel Todd, was formally dedicated January 29.——The annual meeting of the contributors to the Allegheny General Hospital was held January 28. The report shows the number of patients treated since the establishment of the institution, in 1886, 11,430. Attention is called to the overcrowded condition of the hospital.——The annual meeting of the Brooklyn, N. Y., Hospital was held January 30. The officers were reëlected.

DR. A. F. A. KING.—It was stated in this column, February 1, that Dr. A. F. A. King had resigned from Columbian College. It was Columbia *Hospital*, and not Columbian College, from which Professor King resigned.

Philadelphia Notes.

A FIRE occurred in the hospital of the Jefferson Medical College on the 28th ult., caused by the explosion of a partly empty barrel of alcohol in the drug department. The damage was slight, but the patients were badly scared.

THE MEDICAL CLUB held its annual meeting at the Hotel Bellevue on the 29th ult. Dr. Hobart A. Hare was reëlected President, Dr. L. J. Deal, Secretary.

A NEW monthly medical journal has commenced its career in Philadelphia, the *Medical Council*, Dr. J. F. Taylor, editor. It is to be devoted to diseases of women and children, obstetrics and stirpiculture.

DR. WM. OSLER, of Johns Hopkins University, delivered a lecture by invitation before the James M. Anders Society of the students at the Medico-Chirurgical College, on January 21 "Pathology of Addison's Disease."

DR. T. G. MORTON was reëlected President of the Academy of Surgery of Philadelphia.

St. Louis Notes.

REPORTS OF HEALTH OFFICE.—For the week ending January 25: Total number of deaths reported 177, compared with 187 for the preceding week and 173 for the corresponding period of last year. Births reported, 221. For the week ending February 1: Total number of deaths reported 174, compared with 165 for the corresponding period of 1895. Births reported 212. Contagious diseases reported during the week ending January 25: Diphtheria 68 cases, 9 deaths; croup 6 cases, 5 deaths; scarlatina 11 cases, 1 death; typhoid fever 5 cases, 1 death; cerebro-spinal fever 3 cases, 2 deaths; measles 30 cases, whooping cough 10 cases, smallpox 1 case. Reported during the week ending February 1: Diphtheria 56 cases, 8 deaths; croup 3 cases, 2 deaths; scarlatina 6 cases, 1 death; typhoid fever 2 cases, measles 17 cases, cerebro-spinal fever 1 case, 2 deaths; whooping cough 1 case, 1 death.

THE DUESTROW CASE.—On Febuary 3 the jury rendered a verdict of murder in the first degree, after listening to testimony for three weeks. The defense was insanity, and the only chance for justice lay in the weight given to expert testimony. As is usual in cases of this kind, experts appeared for each side, with the result that the case was decided with but slight reference to the facts brought out by the medical testimony, and that expert medical testimony was again covered with popular discredit. The physicians, known as expert alienists, who testified to the prisoner's insanity were Drs. Bauduy, Bremer, Chaddock and Crandall; the experts testifying for the prosecution were Drs. Hughes, Mink and Norbury. With division of opinion among men of such repute it is no wonder that a jury of farmers should take the view that the prisoner's crime was an act of drunkenness as the simplest solution of the case, especially in view of the prejudice against the plea of insanity as an excuse for crime, and the particular prejudice in this case arising from the fact that the culprit's wealth has been regarded as a means, that would be used to obtain an acquittal.

Washington Notes.

Weekly Report of the Health Department.—The report of the Health Officer for the week ended January 25 is as follows: Number of deaths (stillbirths not included) 112, death rate per 1,000 per annum 21.1, death rate per 1,000 per annum corresponding week last year 17.8.

For the Eastern Dispensary.—The Commissioners have again recommended favorable action on the House bill "to authorize the purchase of the lot and building now rented by the Eastern Dispensary and Hospital."

Medical Society.—At the Medical Society meeting held on the 29th ultimo, Dr. W. W. Johnston completed the report of the Committee on Public Health. Dr. Eliot read a paper on personal observations of smallpox patients at the City Hospital last year. Dr. McArdle read a paper entitled "Cod-liver Oil Both a Food and a Medicine."

To Increase the Water Supply.—By request of the District Commissioners, Mr. McMillan to-day introduced in the Senate a bill to amend an act, approved July 15, 1882, entitled "An act to increase the water supply of the city of Washington, and for other purposes." The bill empowers the Attorney General and Secretary of War to obtain all water rights at and in the vicinity of Great Falls, on the Potomac River. Within nine months from the approval of this bill the Attorney General and Secretary of War are required to make a written statement, specifying the lands they may deem necessary to take for the purposes of this act. The Court of Claims is authorized to appoint three persons to determine all controverted questions of fact arising in any suit that may be brought under the authority of this act.

For Better Sewerage.—A delegation of physicians composing the Legislative Committee of the Medical Society of the District appeared before a subcommittee of the District Committee for the purpose of recommending legislation by the House looking to increased sewerage facilities and improvement in the water supply.

To Regulate Medical Schools.—The House committee has reported the bill to provide for the incorporation and regulation of medical schools and colleges. This is the bill prepared by the Commissioners, and provides that it shall be unlawful for any medical college claiming the authority, or actually conferring the degree of doctor of medicine, not incorporated by a special act of Congress, to conduct its business in the District of Columbia, unless such college shall be registered by the Commissioners of the District of Columbia and granted by them a written permit to commence or continue business in the District in compliance with the requirements of this act. Regulations are stipulated for issuing such licenses, and fines and punishments provided for violations of the law. The bill was amended to include dental colleges.

The deplorable ignorance of the lay public on the subject of vivisection, was very forcibly shown at the hearing granted last week by the Commissioners of the District, to those interested in Senate Bill 1552, entitled "A Bill for the further prevention of cruelty to animals in the District of Columbia." It was obvious that none of those who spoke in favor of its passage had the slightest conception of the subject under consideration, but it was apparent that sentiment and sympathy, born of impressions made by exaggerated anti-vivisection publications, actuated their misguided and deluded championship of the bill.

In the absence of knowledge of the subject, no one should chide these good-hearted men and women for the position they assume with respect to vivisection, and until those who are engaged in this branch of necessary scientific research explain to them how carefully, kindly and accurately their work is performed, together with the incalculable benefit obtained in saving human life and preventing the ravage of diseases, will the oft revived "fad," opposition to vivisection crop up.

The general government yearly makes large appropriations for the conduct of scientific prevention of diseases and death in man, beast and vegetation, and the valuable work done, with the more valuable and far reaching results consequently obtained by the departments of "Animal Industry," United States Marine-Hospital Service, Bureau of Medicine and Surgery, United States Army and United States Navy, and the laboratories of the different colleges and hospitals are sufficient to prove that vivisection is necessary, and that any restriction of its practice will seriously impede scientific research and higher education. Education of the masses, and particularly the misinformed opponents to this branch of research, and not acts of Congress, is what is necessary to silence objectors. The provisions and restrictions in the pending bill are sufficiently absurd and ridiculous to warrant its publication in full for criticism by the scientific world.

Prominent among those who presented unanswerable arguments against the passage of the Bill were: Drs. Samuel C. Busey, President of the Medical Society; Kleinschmidt, Magruder, Cook, Somers, and Woodward; Surgeon-General G. M. Sternberg, U. S. A.; J. J. Kinyoun, U. S. Marine-Hospital Service; Walter Reed, U. S. A. Medical Museum; D. E. Salmon, Chief Bureau Animal Industry; Dr. de Schweinitz, of the Bio-Chemic Laboratory; V. A. Moore, Pathologist; Wardell Stiles, Medico-Zoologist, and Dr. Schroeder, Director Experiment Station U. S. Department of Agriculture.

The Bill will never become a law, for Congress will appreciate the impropriety of retarding medical research and scientific investigations by the supervision of uninformed laymen.

In the Senate of the United States.

January 14, 1896.

Mr. McMillan introduced the following bill; which was read twice and referred to the Committee on the District of Columbia.

A BILL.

For the further prevention of cruelty to animals in the District of Columbia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter no person shall perform on a living animal any experiment calculated to give pain to such animal, except subject to the provisions herinafter prescribed. Any person performing, or taking part in performing, any experiment calculated to give pain, in contravention of this Act, shall be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars, or to imprisonment for a period not exceeding six months.

Sec. 2. That the following restrictions are imposed by this Act with respect to the performance on any living animal of an experiment calculated to give pain to such animal; that is to say:

a. The experiment must be performed with a view to the advancement by *new discovery of physiologic* knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering; and

b. The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as is in this Act mentioned; and

c. The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform to prevent the animal feeling pain; and

d. The animal must, if the pain is likely to continue after the effect of the anesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anesthetic which has been administered; and

e. No experiment shall be made upon any living creature calculated to give pain to such creature, in any of the public schools of the District of Columbia; provided as follows, that is to say:

1. Experiments may be performed under the foregoing provisions as to the use of anesthetics by a person giving illustrations of lectures in medical schools, hospitals, or colleges or elsewhere, on such certificate being given as in this Act hereinafter mentioned, that the proposed experiments are absolutely necessary for the due instruction of the persons to whom such

lectures are given, with a view to their acquiring physiologic knowledge or knowledge which will be useful to them for saving or prolonging life or alleviating suffering;

2. The substance known as urari or curare shall not for the purposes of this Act, be deemed to be an anesthetic; and

3. Notwithstanding anything this act contained, no experiment calculated to give pain shall be performed on a dog or cat, except upon such certificate being given as in this Act mentioned, stating, in addition to the statements hereinbefore required to be made in such certificate, that for reasons specified in the certificate the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution to a cat or dog, and no other animal is available for such experiment; and an experiment calculated to give pain shall not be performed on any horse, ass, or mule, except on such certificate being given as in this Act mentioned, that the object of the experiment will be necessarily frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for such purpose; and

4. Any exhibition to the general public, whether admission be on payment of money or gratuitous, of experiments on living animals, calculated to give pain, shall be illegal.

Any person performing or aiding in performing such experiment shall be deemed to be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars or to imprisonment not exceeding six months; and any person publishing any notice of any such intended exhibition by advertisement in a newspaper, placard, or otherwise, shall be liable to a penalty not exceeding ten dollars.

A person punished for an offense under this section shall not for the same offense be punishable under any other section of this Act.

SEC. 3. That the Commissioners of the District may insert, as a condition of granting any license, a provision in such license that the place in which any such experiment is to be performed by the licensee is to be registered in such manner as the said Commissioners may from time to time by any general or special order direct: *Provided*, That every place for the performance of experiments for the purpose of instruction shall be approved by the said Commissioners, and shall be registered in such manner as the said Commissioners may from time to time by any general or special order direct.

SEC 4. That the Commissioners of the District, upon application as hereinafter prescribed, may license any person whom they may think qualified to hold a license to perform experiments under this Act. A license granted by them may be for such time as they may think fit, and may be revoked by them on their being satisfied that such license ought to be revoked. There may be annexed to such license any condition which the said Commissioners may think expedient for the purpose of better carrying into effect the objects of this Act, but not inconsistent with the provisions thereof.

SEC. 5. That the Commissioners of the District may direct any person performing experiments under this Act from time to time to make reports to them of the result of such experiments, in such form and with such details as the said Commissioners may require.

SEC. 6. That the Commissioners of the District shall cause all registered places to be from time to time visited by inspectors without previous notice, for the purpose of securing compliance with the provisions of this Act, and shall appoint and authorize an agent of the Washington Humane Society to make such inspection, and may also appoint such special inspectors as they may think fit, either permanently or temporarily, who may be willing to act as such inspectors gratuitously.

SEC. 7. That any application for a license under this Act, and for a certificate to be given as in this Act mentioned, must be signed by three physicians duly licensed to practice and actually engaged in practicing medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established and reliable school or college in the District of Columbia: *Provided*, That when any person applying for a certificate under this Act is himself one of the persons authorized to sign such certificate, the signature of some other of such persons shall be substituted for the signature of the applicant.

A certificate under this section may be given for such time or for such series of experiments as the persons signing the certificate may think expedient.

A copy of any certificate under this section shall be forwarded by the applicant to the Commissioners of the District but shall not be available until one week after a copy has been so forwarded.

The Commissioners of the District may at any time disallow or suspend any certificate given under this section.

SEC. 8. That the powers conferred by this Act of granting a license or giving a certificate for the performance of an experiment on living animals may be exercised by an order in writing, under the hand of any judge of a court of record having criminal jurisdiction in the District, in a case where such judge is satisfied that it is essential for the purposes of justice in a criminal case to make such experiment.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 25, 1896, to January 31, 1896.

Capt. Benjamin Munday, Asst. Surgeon, is granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension.

First Lieut. William H Wilson, Asst. Surgeon, is relieved from duty at Ft. Leavenworth, Kan., and ordered to Ft. Bayard, N. M., for duty at that post.

First Lieut. Harry M. Hallock, Asst. Surgeon, is relieved from duty at Ft. Bayard, N. M., and ordered to Ft. Logan, Colo., for duty at that post.

Capt. Benjamin L. Ten Eyck, now at Columbus Bks., Ohio, is ordered to Ft. Niobrara, Neb., for temporary duty.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending February 1, 1896.

Asst. Surgeon A. B. Pusey, detached from the "Cincinnati" and ordered to the "Vermont."

Asst. Surgeon G. C. Hubbard, detached from the "Vermont" and ordered to the "Cincinnati."

Asst. Surgeon C. M. De Valin, ordered to the naval hospital, Philadelphia.

Surgeon J. M. Steele, detached from the torpedo station and ordered to special duty on the "Independence."

Surgeon M. H. Simons, detached from special duty at Portsmouth, N. H., and ordered to the torpedo station.

Medical Inspector G. F. Windslow, detached from the "Philadelphia" and granted three months' leave.

Surgeon J. A. Hawke, detached from the "Baltimore" and ordered to the "Philadelphia" as fleet surgeon of the Pacific station.

Asst. Surgeon A. Farenholt, detached from the "Baltimore" and ordered to the "Monterey."

Change of Address.

Hosmer, A. J., from Ashland, Wis., to viii Landau Gasse 13, Vienna, Austria.

Kercher, John, from 112 E. 18th to 101 E. 18th St., (Suffield Flats) Chicago, Ill.

Lincoln, D. F., from Geneva, N. Y., to 73 Pinckney St., Boston, Mass.

Miller, De Laskie, from 2419 Michigan Ave. to Virginia Hotel, Chicago, Ill.

Owsley, W. T., from Glasgow to Eastern Kentucky Asylum for the Insane, Lexington, Ky.

Roseberry, B. S., from Lacon, Ill. to El Paso, Texas.

LETTERS RECEIVED.

American Publishers' Collection Agency, New York, N. Y.; Alma Sanitarium Co., Alma, Mich.; Arthur, W. H., Fort Myer, Va.; Atwater, W. O., Middletown, Conn.

Brayton, S. H., Evanston, Ill.; Barnes, Ira N., Decatur, Ill.; Batman, W. F., Lebanon, Ind.; Brown Advertising Agency, F. F., New York, N. Y.

Cochran, Jerome, Montgomery, Ala.; Caldwell, S. B., New York, N. Y.; Christian, E. P., Wyandotte, Mich.; Columbus Phaeton Co., The, Columbus, Ohio.

Dibble, L. A., Kansas City, Mo.; Davis, Geo. S., Detroit, Mich.; Drewry, Wm. Francis, Petersburg, Va.; Day, Francis C., Plymouth Meeting, Pa.; Dabney, J. G., Louisville, Ky.; Duke, B. F., Moss Point, Miss.

Elliott, W. H., Savannah, Ga.; Engelmann, Rosa, Chicago, Ill.; Evans, T. W., Madison, Wis.

Fletcher, M. H., Cincinnati, Ohio.

Gould, Geo. M., Philadelphia, Pa.; Graef & Co., Chas., New York, N. Y.; Green, Mary E., Charlotte, Mich.; Gittelson, S. J., Philadelphia, Pa.; Greene, Chas. L., St. Paul, Minn.

Holton, Henry D., Brattleboro', Vt.; Houston, Grant, Joliet, Ill.; Haven, O. D., Youngstown, Ohio.

Irwin, J. W., Louisville, Ky.

Jepson, S. L., Wheeling, W. Va.; Jackson, Edward, Denver, Col.; Judson, A. B., New York, N. Y.

Kelly, R., Portland, Ore.; Keech, J. S., Racine, Wis.; Keith, Wm., Chicago, Ill.; Kercher, John, Chicago, Ill.; Kuhn, C. F., Port Townsend, Wash.; King, A. F. A., Washington, D. C.

Lindley, Walter, Los Angeles, Cal.; Lord & Thomas, Chicago, Ill.; Lincoln, D. T., Boston, Mass.

McDonald, T. P., Virginia City, Nev.; McClintock, C. T., Ann Arbor, Mich.; Morison-Jewell Filtration Co., New York, N. Y.; Michael L., Ferndale, Cal.; Massey, G. Betton, Philadelphia, Pa.; Miller, A. E., Washington, D. C.; Madden, John, Milwaukee, Wis.; Miller, De Laskie, Chicago, Ill.; Morse, Lyman D. Advertising Agency, New York, N. Y.

Orton, John J., Randolph, Ohio.

Pickford, E. F., Washington, D. C.; Power, H. D'Arcy, Sacramento, Cal.

Robinson, J. A., Chicago, Ill.; Rosenthal, Jacob, Chicago, Ill.; Roseberry, B. S., El Paso, Texas.

Sternberg, G. M., Washington, D. C.; Sharpe, E. C., Clifton City, Mo.; Simmons, C. J., New York, N. Y.; Steiger, E. & Co., New York, N. Y.

Tillier, F., Blue Earth City, Minn.; Taylor, C. F., Philadelphia, Pa.; Tucker, E. F., Portland, Ore.

Utley, H. M., Detroit, Mich.

Vinnedge, W. W., LaFayette, Ind.

Warden, A. W., New York, N. Y.; Woodbury, Frank, Philadelphia, Pa.; Wilkinson, Mrs. H., Chicago, Ill.; Woodward, A. P., San Francisco, Cal.